

ARTICLE VIII

BASE BUILDING REQUIREMENTS

8.1. Introduction.

8.1.1. Design Overview. This Article VIII sets forth the minimum Base Building performance requirements. In addition, Lessor acknowledges that it has received and reviewed the POR, which is attached hereto as revised Schedule 5.2.1 and made a part of this Lease, and that it believes that the design of the Base Building is complementary to and will accommodate the requirements of the POR. The Government reserves the right to change its POR at any time. If any change to the POR delays the Lessor's design and construction activities, requires redesign of some aspect of the Base Building, increases the Lessor's cost to construct the Base Building, or requires redesign of previously accepted Fit-Out design, then in any such case, subject to the procedural requirements of this Lease, the cost of any such delay, design or construction modification actually required and made by the Lessor shall be a Government expense, negotiated as provided in this Lease, and satisfied from the Fit-Out Allowance, or through a lump sum payment or amortization, as described in Section 3.2.

8.1.2. Overview. The Lessor is solely responsible for completing all site development, the design and construction of all buildings, structures and other improvements, and for the design and construction of all interior spaces and tenant finish work contemplated under this Lease. The cost of such Site Improvements, Base Building design and construction and Fit-Out design and build-out shall be satisfied (a) through the Lessor's completion of all Site Improvements and Base Building construction requirements set forth in this Article VIII, at its cost, or (b) (i) through the application of the Fit-Out Allowance to the design and construction of the Fit-Out, or (ii) through the Government's lump sum payment or amortization (at the Government's option) of any additional costs for the Fit-Out over and above the Fit-Out Allowance (see Section 3.2). As provided in this Lease, Lessor is responsible for designing, constructing, installing, operating and maintaining all Fit-Out.

The Base Building requirements described in this Article VIII are composed of two sub-categories: "Base Building Standard Requirements," as described in Section 8.1.3 and Sections 8.2 through 8.14 below; and "Base Building Joint Use Requirements," as described in Section 8.15 below.

8.1.3. Base Building Description. The requirements for the Base Building are described in general terms in the following paragraphs and are itemized in more detail below, in the descriptions of the Base Building Standard Requirements and the Base Building Joint Use Requirements, and are shown more particularly on the Design Documents. The Building Floor Plans demonstrate design and layout of the Leased Premises. Also reflecting that design are four (4) renderings attached hereto as Schedule 8.1.3.

The Lessor shall provide, as part of the Base Building, all Site Improvements, including all land acquisition and development, the master planning, zoning, design and construction of all appropriate site infrastructure improvements, such as roadways, passageways, parking areas and facilities, primary site trunk lines for utilities and mechanical systems, and all site landscaping. Base Building includes all financing costs incurred in connection with designing

and constructing the Facility (whether such financing cost is part of the Base Building construction or the Fit-Out Allowance), as well as internal Lessor costs incurred in connection with the land acquisition, land development, and Base Building (but not the Fit-Out) construction required under this Lease. Base Building also includes the costs of all permits, licenses, fees or other charges required by governmental authorities or incurred by the Lessor in connection with the Base Building (but not the Fit-Out) construction required hereunder (whether for zoning approvals, construction approvals or permits, or otherwise), as well as all management costs for Base Building construction. Base Building also includes all architectural, engineering and specialty consultant services and design costs (including all design and construction drawings) incurred in connection with completing the Base Building (but not in connection with completing the Fit-Out).

Base Building includes the Lessor's obligation to construct and complete the basic building structure of each Building and improvement, including foundation, floor slabs, roof and shell (windows, skin and entrances). Base Building includes all building core elements, including those core building areas (collectively, "Base Building Spaces") described in detail in Article VIII. Base Building Spaces include, but are not limited to, entrance lobbies and doors, atrium, penthouses, elevator lobbies, service shafts, those restrooms described in Section 8.8.7, mechanical, janitor and electrical rooms or closets and Telephone Rooms (but not the LAN Rooms), main communication vaults, switch room and MDF rooms, elevators, entry-level public corridors, those stairways described in Section 8.8.11, all environmentally-controlled passageways that connect buildings, and all loading docks. No Base Building Spaces shall be included in the Government's calculation of its Occupiable Space under this Lease. As described in more detail in this Article VIII, as part of the Base Building Standard Requirements, all Base Building Spaces shall be completed in all respects and shall be ready for the Government's use and enjoyment.

Base Building includes the delivery of all primary mechanical (stubbed out from each floor mechanical room/shaft to the Occupiable Space), primary fire safety, primary plumbing and primary electrical systems sufficient in size to service all Occupiable Space from main mechanical and electrical central plant(s) or sources, as well as the complete distribution of such mechanical and electrical systems to and throughout all parking facilities, and all Base Building Spaces and, to the extent required in Sections 8.15.1 through 8.15.12, Joint Use Spaces (noting that all branch and secondary distribution of such systems within the interior of the general offices and that which is not directly required by Sections 8.15.1 through 8.15.12 to be provided by the Lessor for Joint Use Spaces shall be part of the Fit-Out, rather than the Base Building). Base Building plumbing for sprinkler systems includes all primary distribution piping (risers, fire department connection, stand pipes, pumps and fire annunciator inter-connects) and stubbed-in supply lines (noting that branch and secondary system components of such sprinkler system within the office and Joint Use Spaces shall be part of the Fit-Out). Base Building includes exhaust risers and wet stacks sufficient to support Fit-Out construction in all distributed spaces (e.g., galleys and copy rooms have separate exhaust and/or plumbing requirements), as such Fit-Out is further described in this Lease.

8.1.4. Tenant Fit-Out Description. The Fit-Out includes all floor coverings, interior partitions, ceilings (including all grid, tile and hangers or hard ceilings, as applicable), lights, electric, telephone and data outlets, interior doors, wall coverings, and interior window treatments (other than the window blinds required under Section 8.6.4) and accessories, in

each case for Occupiable Space (noting, however, that such items for Base Building Spaces shall be provided as part of the Base Building and not the Fit-Out). Fit-Out also includes all branch and secondary distribution systems for mechanical (HVAC, plumbing and fire sprinkler) and electrical services throughout the office areas and Joint Use Spaces (except to the extent HVAC distribution is directly required to be provided by Lessor pursuant to Sections 8.15.1 through 8.15.12). Fit-Out also includes all architectural, engineering and specialty consulting services (including design and construction drawings) for the Fit-Out (but not for the Base Building). As provided in this Lease, Lessor is responsible for providing, designing, constructing, installing, operating and maintaining all Fit-Out. Lessor is responsible for coordination of Base Building design and Fit-Out design.

8.2. Building Codes/Applicable Law/Accessibility.

8.2.1. Codes/Applicable Law. All design and construction work shall comply with the current applicable building code enforced by the City at the time of permit application, modified to include to the extent not inconsistent, the Life Safety Code requirements of the National Fire Protection Association ("NFPA"), Building Officials and Code Administrators International, Inc. ("BOCA") National Electrical, Mechanical and Plumbing Code, the Commonwealth of Virginia Building Code, and all applicable local jurisdiction codes, ordinances and regulations, current as of the time of permit application, as well as all other Applicable Law (as applicable, the "Code"). The most stringent Code or other Applicable Law requirement shall govern in instances where Codes or other Applicable Laws conflict, provided such Codes or Applicable Law do not conflict with applicable building code of the City at the time of permit application.

8.2.2. Accessibility. Design and construction of all portions of the Facility shall comply with the new construction requirements of the Americans with Disabilities Act of 1990 and all regulations and authority implementing or interpreting the same, including the Accessibility Guidelines (ADAAG) (collectively, the "ADA") and the Uniform Federal Accessibility Standards ("UFAS"). Where the Standards of the ADA and UFAS conflict, the more stringent standards shall apply. Without limiting the generality of the preceding sentence, the Lessor should take particular note of the requirements of the ADA and UFAS applicable to toilet room interiors and entrances, Facility signage, audiovisual alarms, material surfaces, door clearances and door hardware. It may be in the best interest of the Lessor to retain a specialty consultant to assist the Lessor in satisfying all ADA and UFAS requirements.

8.2.3. Historic Preservation Act/Final Environmental Impact Statement. As part of satisfying its requirements under this Lease, the Lessor shall fund and undertake any actions required for the Government to comply with all obligations under the National Historic Preservation Act of 1966, as amended, as they pertain to the Site, including without limitation, completing all filings and reports required under Section 106 of such law, including the MOA described in Section 5.1.4.

In the event that the area of potential effect ("APE") identified in the Final Environmental Impact Statement (dated January 1999) is expanded after Lease award, the Lessor shall still undertake any actions required for the Government to comply with said obligations; however, any delays resulting from work outside the original APE (other than delays directly or indirectly caused by Lessor's failure to negotiate with reasonable diligence the MOA

referenced in Section 5.1) shall be Excusable Delays and the Government shall make an equitable adjustment, to compensate the Lessor for any additional direct costs. All indirect cost increases caused by such delays, including without limitation increased overhead, financing or legal fees incurred at any level, shall be funded by the Lessor at no additional cost to the Government.

8.3. Industry Standards. The design shall conform to the then most current industry standards including, but not limited to, the following; provided, that, in the event of a direct conflict between the various standards listed below, local building code shall be the initial reference point for the resolution of such direct conflict, and provided further that if there is no direct conflict between differing standards, the more stringent standard shall govern:

Acoustical Society of America ("ASA") standards.
American Concrete Institute ("ACI") standards.
American Institute of Architects ("AIA") Handbook of Professional Practice standards.
American Institute of Steel Construction ("AISC") standards.
American National Standards Institute ("ANSI") standards.
American Society for Testing and Materials ("ASTM") standards.
American Society of Heating, Refrigeration and Air Conditioning Engineers, Inc. ("ASHRAE") standards.
American Society of Mechanical Engineers ("ASME") standards.
ASME A17.1-Safety Code for Elevators & Escalators, ASME A17.5 (1995), ASME A17.1a (1994).
Brick Institute of America ("BIA") standards.
Commercial Building Standard for Telecommunications Pathways and Spaces EIA/TIA 569.
Commercial Building Telecommunications Wiring Standard EIA/TIA 568.
Commercial Building Telecommunications Grounding Standard EIA/TIA 607.
Construction Specification Institute ("CSI") standards.
Environmental Protection Agency ("EPA") Regulations.
Federal Communications Commission ("FCC") Regulations.
GSA Security Criteria Study Report dated April 16, 1996 (draft), modified by the provisions of this Lease (the "GSA Security Criteria").
Illuminating Engineers Society ("IES") standards.
GSA Child Care Design Guide PBS P140, dated June of 1998, as updated.
National Electrical Manufacturers Association ("NEMA") standards.
National Roofing Contractors' Association ("NRCA") standards.
Occupational Safety and Health ("OSHA") Regulations for Construction, 29 CFR Parts 1926 and 1918.
Sheet Metal and Air Conditioning Construction Contractors National Associates Inc. ("SMACNA") standards.
Underwriters' Laboratories ("UL") standards.
"Vertical Transportation Elevators and Escalators," written by George Strackosch, most current edition.

8.4. Site.

8.4.1. Site Layout. The preliminary site layout is attached hereto as Schedule 2.1.A.

8.4.2. Site Utilities. All Site improvement infrastructure is the responsibility of the Lessor. The Site must be served by public water distribution and waste-water collection systems. Subject to the last sentence of this Section 8.4.2, all existing utility services to the Site, to the extent provided underground by the utility, and all utility services provided to the various Buildings within the Site shall be underground. Each utility feeder shall be rated for sufficient capacity to serve the entire Campus and both feeders shall have switching capabilities to allow either feeder to support the entire load. The first feeder of the dual power feeders is already in place. Lessor shall provide a second power feeder which originates from a separate and distinct substation. Lessor shall encourage the utility provider to provide such second power feeder from its substation to the Site underground.

8.4.3. Site Vehicular Access and Circulation Criteria. Access roadways and service drives shall be paved, with concrete curbs and gutters, and shall service each Building and the parking facilities in the Facility. The Lessor shall provide service aprons as access for all Building service entrances in order to separate service areas from public entrances. The Lessor shall provide means for vehicular and pedestrian traffic control of the Site, including on any public right-of-way controls and signage required by the local jurisdiction, and two (2) bollards and a connecting chain at each street end of each service apron, as indicated on the Design Documents.

The Lessor shall provide drop-off points at each Building and shall further comply with Schedule 2.10 in all respects.

8.4.4. Site Parking/Transportation. The Lessor shall construct parking in accordance with the requirements set forth in Article IV and as provided below. Parking areas shall include a gated parking control system. Lessor shall provide secure separation (i.e., electric gate) between space dedicated for the Child Care Center and Government vehicle parking and the remainder of parking. The west garage shall have a mechanical room, a garage operator's office, and bike storage area of approximately 325 square feet adjacent to the Elizabeth Lane entrance. The east garage shall have a mechanical room on the below grade level.

Lessor shall provide two parking facilities located in the southeast and southwest quadrants in accordance with the requirements set forth herein as shown on the Design Documents. The parking facilities shall be accessed either from Elizabeth Lane or Carlyle Street and, for the east garage, from Eisenhower Avenue. A total of no less than three thousand five hundred sixty-one (3,561) parking spaces are provided in the parking garage structures.

The east and west garages shall be seven level almost mirror image facilities except for the entrance locations and the east garage being one floor lower than the west garage. The internal traffic circulation shall consist of a three bay, side-by-side, single helix in which two bays shall be level and one bay shall be ramping. The level bays shall accommodate one way traffic with 70 degree angle parking and the ramping bay shall accommodate two way traffic and 90 degree parking.

Parking areas in the east and west garages shall be provided for the following user types in accordance with Lease and City requirements:

- SOV monthly parkers

- SOV staggered monthly parkers
- van pool parkers
- HOV-3 parkers
- HOV-2 parkers
- USPTO visitor parkers
- USPTO dedicated spaces for Government-owned vehicles
- Lessor reserved spaces
- ADA and UFAS accessible spaces

Parking spaces shall include a mix of compact car spaces, standard car spaces, and van spaces. All spaces shall be measured in accordance with City and industry standards. Compact spaces shall measure a minimum 8'-0" wide x 16'-0" long. Standard size and van spaces shall measure a minimum 9'-0" wide x 18'-6" long. Accessible (ADA) spaces shall be 8'-0" wide and shall include an access aisle in compliance with the ADA accessibility guidelines (ADAAG) and UFAS. Accessible spaces shall be distributed on the various levels adjacent to the elevator tower. Van accessible ADA spaces with a 8'-2" vertical clearance shall be located at the entry level of each garage adjacent to the elevator lobbies.

Six access control lanes shall be provided with two lanes being reversible in the east garage and four access control lanes shall be provided with two lanes being reversible in the west garage. The Eisenhower entrance in the east garage will have one access lane permanently inbound and one permanently outbound.

The Lessor shall provide "state-of-the-art" parking access control equipment, with card access control. All equipment and infrastructure necessary for site-managed contractor operation including an attendant booth will be provided by the Lessor in both garages. The Lessor shall provide conduit(s), wiring, and other infrastructure required to connect the garage security equipment to the main campus security system.

Lessor shall provide the following features in the parking facilities:

- the floor area shall be level to the maximum extent possible to promote openness, visibility, and walking comfort
- lighting in accordance with the Lease
- elevators with open, visible lobbies
- CCTV cameras located on each level, at vehicle entrances and in all stair towers
- audio intercoms located at entry and exit lane equipment and cashier booths
- panic buttons/audio intercoms at each level
- security screen at all pedestrian-accessible perimeter openings
- roll down grilles at entry/exit lanes to the parking structures

The Lessor shall construct (using the features noted below) and operate (using industry maintenance practices common to Class A facilities) the parking facilities in a manner as to minimize long-term maintenance costs and maximize the long-term life and use of the parking facilities, using design features such as corrosion resistant connections, silane floor sealer (or other acceptable sealer) and good drainage to protect the structures from the deteriorating effects of freeze-thaw action and deicing salts.

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8.4.5. Site Pedestrian Circulation Criteria. Passageways to adequately connect pedestrian traffic to all facilities shall be provided by Lessor in accordance with the Design Documents. Environmentally controlled and conditioned underground concourse level walkways shall be provided to connect adjacent Buildings in a continuous loop. In addition, Lessor shall provide covered but non-environmentally-controlled walkways which shall connect Building A to the parking garages and the segregated Child Care Center parking area in the east parking garage to the Child Care Center on Level 1 of Building C.

Service circulation shall be separated from pedestrian, non-service circulation via service tunnels between Buildings B and D and Buildings C and E. There also shall be a concourse level pedestrian connection between Buildings D and E. Walking distance between the top floors of the furthest buildings in the Facility shall not exceed fifteen minutes travel distance, with walking speed calculated at the rate of two and one-half (2.5) miles per hour and with all elevator waiting times included in the analysis.

8.4.6. Site Landscape. The Site shall be landscaped by Lessor with grass areas, trees, flowering shrubs and seasonal and permanent plantings. The landscape shall provide stimulating, aesthetically-pleasing settings. The landscape shall include ecologically appropriate landscape elements, with extensive use of visual architectural landscape elements such as exterior plazas, decorative water features, outdoor seating areas and paved walking trails, and shall incorporate appropriate design features to eliminate exposed concentrations of water runoff. The landscape shall incorporate hardscape and softscape ground cover materials, fencing, gates, and exterior lighting required for the Child Care Center playground and Cafeteria outdoor seating areas (see Base Building Joint Use Requirements).

Lessor shall provide the Campus Green which shall consist of two formal gardens, each landscaped in a different style and framed on three sides by the Buildings in accordance with the Design Documents. Two Campus Gardens, West and East, shall be located between Building A and Buildings B and C, respectively, and shall accommodate, in the West Garden, seating adjacent to the Cafeteria.

Lessor shall provide several large open areas (which shall include those areas described above) that shall incorporate a variety of spatial sizes, solar orientations and uses. These spaces shall be designed with a variety of paving and other landscaped features. Lessor shall provide in such areas (other than the area adjacent to the Cafeteria) large amounts of seating in the form of low walls, benches, chairs and tables. Lighting shall be sufficient for nighttime use and security in all spaces. Large trees shall offer significant shaded seating in the warmer months, while areas left open to the sun shall afford cooler season sitting and opportunities for sun-loving flowers in the summer. Much of the area of each space shall be devoted to rich planting beds with flowers and evergreens in a garden setting. Occasional lawn areas shall afford the opportunity to "lie on the green" at lunchtime. Each planting area shall include sufficient planting soil volumes to support long-term, low-maintenance plant growth. Planting areas shall be irrigated where appropriate.

All public sidewalks around the perimeter of the project shall be built to the standards required by the Streetscape Design Guidelines prepared by the Carlyle Development Corporation for the Carlyle Development project, subject to any applicable requirements of the City. This shall generally include brick sidewalks, concrete curb and gutter, Acorn® lights on fiberglass

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Washington® light poles, and metal furnishings. Street trees shall be a variety of species as dictated by the design standards, planted in large openings with evergreen ground cover plantings. Each street tree shall be planted in a large soil volume continuous from tree to tree under the pavement and provided with drainage.

8.4.7. Flagpole. The Lessor shall provide a minimum of two (2) flagpoles for the Facility, dedicated for Government use. Location of the flagpoles shall be approved by the Government.

8.4.8. Lightning Protection. The Lessor shall provide adequate lightning protection for all buildings and building systems at the Facility. Copper, copper alloy, or aluminum shall be the base metal for terminals and conductors. Application of materials shall be in accordance with NFPA 780.

8.4.9. Exterior Signage. The Lessor shall provide a Main Entrance which shall serve as the monumental exterior public entrance to the complex. The Main Entrance shall be provided off Jamieson Avenue and shall be formed by the two pavilions of Buildings D and E. The Lessor shall provide primary exterior identification for each Building which shall identify the USPTO by name and shall be both easily readable and recognizable by both vehicular and pedestrian visitors, as shown on Schedule 8.1.3. Lessor shall provide a carefully designed, high quality system of signage for each Building exterior clearly identifying the names and addresses of the Buildings. Lessor shall provide a series of maps throughout the Site, which shall indicate locations of important public uses, reinforced by the use of smaller scale directional signs. The Government shall have the right to approve in writing the size, type and location of any sign, including any entry feature.

8.5. Site Livability. In addition to the specific requirements of this Lease, but subject to the security provisions of Section 8.13, the Lessor shall develop the Site in a manner that will maximize and enhance its livability, including maximizing opportunities for public access to, public uses and activities on, and public circulation within the Site. The Lessor shall identify, in coordination with the Government, potential measures to increase and/or facilitate pedestrian and vehicular access and circulation to and within the Site, as well as, landscaping, lighting, signage, and other Site Improvements, including enhancements to the Campus Green, designed to maximize the Site's livability.

8.6. Exterior Architecture.

8.6.1. Quality and Appearance of Building Exterior. The Buildings shall have a facade of granite, brick, stainless steel, aluminum, pre-cast concrete or other permanent materials. Exterior insulation and finish system ("EIFS") is an acceptable material for the walls of the penthouses. The Facility shall be compatible with its surroundings, and shall project an overall professional and aesthetically-pleasing appearance, including attractive building fronts and entranceways. The facade should be designed in the context of the site and should convey an impression of permanence.

8.6.2. Exterior Wall System. The exterior wall system shall have a minimum 50-year life span (measured from the Commencement Date) and shall be designed for ease of maintenance and operations. The exterior wall system of the parking structures shall be poured-in-place or

precast concrete in a finish that complements the Buildings, except along Eisenhower Avenue where a freestanding brick screenwall will be provided.

Buildings B, C, D, and E shall line both sides of the Campus Green, bordering and framing the boulevard which leads up to Building A at the head of the open space. The Buildings shall be constructed with a combination of brick and high quality architectural precast concrete panels which shall be light in color primarily with punch windows. All windows shall be double glazed with low "E" coated clear glass to reduce solar gain and meet the technical criteria outlined above.

Building A, at the end of the Campus Green, shall be composed of a central Atrium, rising approximately 215 feet above the main entry, flanked by eleven (11)-story wings at either side. These lower wings shall be similar to Buildings B, C, D, and E in size, color and construction. The wings shall consist of a high quality, light color precast, light color mullions, and clear low "E" glass. The central Atrium shall be primarily curtain wall construction, with light colored metal and clear glass.

8.6.3. Exterior Shell Performance Criteria. The Buildings shall meet the requirements of the latest edition of ASHRAE 90-A, except that the "U" values for the various building components shall not exceed those cited below unless higher values are economically justified based on a building life cycle cost analysis and are approved in writing by the CO:

Roof Transmission "U" Factor:	0.03 BTU/SF-HR-°F
Wall Transmission "U" Factor:	0.06 BTU/SF-HR-°F
Floor Transmission "U" Factor:	0.05 BTU/SF-HR-°F
Window Transmission "U" Factor:	0.30 BTU/SF-HR-°F

8.6.4. Windows. Window areas shall be approximately fifty percent (50%) of the exterior building walls measured on the interior surface of such walls from the finished floor to finished ceiling. Each above grade exterior bay in the Occupiable Space shall have a window.

All windows shall be weather-tight. Air infiltration of the exterior glazing system shall be no greater than 0.06 cfm per square foot of fixed area, measured at 6.24 lbs./SF. Windows shall have (i) low "E" glass with a winter U_e of 0.35 or better (as to performance) and a maximum shading coefficient of 0.5 or, (ii) without low "E" glass, a winter U_e of 0.5 or better (as to performance) and a maximum shading coefficient of 0.45 or (iii) another combination of U value and shading coefficient which produces equivalent energy consumption to the values above as demonstrated by an annual hourly energy analysis. Windows on the sides of Building A within the Atrium must have equivalent energy efficiency. Minimum transmittance of visible light shall be fifty percent (50%). Windows shall have a minimum condensation reduction factor of 45.0. Windows shall maintain a surface temperature above dew point at the interior building face. There shall be no uncontrolled water penetration at 6.24 lbs./SF pressure differential. Glass spandrel panels shall meet the performance criteria specified for walls as described in Section 8.6.3. Windows shall not compromise energy efficiency or building security.

All windows in the Occupiable Space shall be equipped with window blinds. The blinds shall have durable, horizontal aluminum slats of 1" width. The color selection of such blinds will be

made by the CO from three (3) reasonable samples provided by Lessor. The window blinds shall have non-corroding mechanisms and synthetic tapes.

Light shall be brought to large Building A floor plates by the use of the Atrium that is adjacent to Occupiable Space in addition to the light brought in by the perimeter windows. The Atrium shall be built on a North/South axis for appropriate exposure in all seasons. Lessor shall provide two (2) double doors and four (4) single leaf doors for the balconies on Level 10 for Building A. In addition to the required doors for egress, the Lessor shall provide doors in the exterior walls at ground level and in interior walls to lobbies from Occupiable Space in Buildings A, B, C, D and E not to exceed sixteen (16) single leaf doors. The Government shall identify the requested location of such doors within one hundred twenty (120) calendar days after Government approval of the Design Documents.

8.6.5. Roof. The building roof construction shall be in accordance with guidelines set forth by the NRCA. All roof-top equipment shall be elevated from the surface of the roof assembly and shall be properly secured, screened and isolated to minimize sound transmission. The drainage system shall be sized to meet the fifty year rainfall. The roof shall be sloped as required to conform to the roofing manufacturer's recommendations and to permit warranty of the roof system throughout the Lease Term. Roof penetrations shall be minimized in compliance with NRCA and within guidelines of good mechanical engineering practices. Roof assembly design shall minimize the difficulty of discovering leak locations (e.g., shall use a protected roof membrane) and shall minimize ultraviolet light deterioration of the roof assembly. The roof material shall be an insulated membrane roofing with gravel ballast coverings. To the extent possible, the roof membrane shall be fully adhered to a sloped concrete substrate, and roof drains shall be located mid-span. For placement of one or more Government satellite antenna dishes, the Lessor shall provide a reinforced concrete pad on the roof of each building, which pad shall have minimum dimensions of 5' x 5'. The Lessor shall provide one (1) 4" diameter non-corrosive conduit connection from the roof-top satellite communication dish pad to the nearest Telephone Room located on the top floor of the building. In no event shall renderings, models or model photographs be construed as depicting any roof condition.

8.7. Structure.

8.7.1. Structural System Requirements. The structural system shall accommodate significant flexibility for efficient layout of all Government program requirements for office space and Joint Use Spaces. In all cases, the structure shall meet Code. The slabs shall be supported on poured-in-place concrete columns which are in turn supported by variable foundation types depending on their location on the Campus.

8.7.2. Floor to Ceiling Dimension. Finished ceiling height throughout the Occupiable Space (including the areas shown on the Building Floor Plans as scheduled to receive raised floors) shall be a minimum of 9'-0", measured from finished floor to the underside of the finished ceiling. Bulkheads shall not reduce finished ceiling height in any portion of the Occupiable Space below the minimum ceiling heights set forth in the preceding sentence. Finished ceiling height for the building entry-level public spaces shall be a minimum of 12'-0", unless otherwise noted in the requirements for Joint Use Spaces.

The Lessor shall provide sufficient unobstructed horizontal ceiling plenum to support: (i) the Fit-Out HVAC, electrical, and plumbing secondary distribution system, and (ii) wire distribution capabilities for the Government voice, data, security and video distribution requirements. The ceiling plenum shall be a minimum of 20" (except in low pavilion areas at Buildings A, D and E, and in setbacks at Buildings A, B, C, D and E, and upper floor setbacks and in the Progressive Collapse bays, as each is shown in the shaded areas of the Design Documents, and in the concourse level at walkway tunnels; as to all such areas Lessor shall, to the extent necessary, provide sleeves for mechanical access and such plenum shall never be less than 6" in the entire Occupiable Space) measured from the finished ceiling to the bottom of the lowest structural obstruction above the finished ceiling, except where reduced by (a) column capitals which shall be around individual columns, or (b) a localized structural condition, such as a column head, provided that such a condition does not extend from column to column, or (c) progressive collapse prevention mechanisms, if necessary or required by GSA Security Criteria, at or near the perimeter slabs. Except at or near the perimeter slabs, there shall be a continuous path of at least 20" plenum depth through every column bay at Buildings A, B, C, D and E and upper floor setbacks and in the Progressive Collapse bays and into its adjacent column bays.

Typically, the durability (serviceability), as such terms are understood and used as part of structural design, of the flat slab structure shall not be limited by beam interferences. Interfloor penetration in the bay centers shall be easily accommodated (compared to the effort required to penetrate alternative structural systems). The flat slab system shall allow the facade of the building to be developed within architectural, aesthetic considerations, the City suggested height limits and the architectural vocabulary of the area.

8.7.3. Structural Bay Size. The Lessor shall provide a minimum bay size of 800 square feet with uniform column spacing on a 5'-0" module for Occupiable Space unless otherwise specified in the Joint Use Space requirements. The bay size and/or column spacing may be altered on the east and west elevations of Building A, concourse level through Level 2, in the "lantern" portions of Buildings D and E, and at the bays along the perimeter of the Buildings.

The typical 30' x 30' structural bay shall be formed by a 9" concrete reinforced flat slab cambered during construction to achieve reasonable floor flatness. The slabs shall generally be underlain by a drop panel projecting 5-1/2" downward below the slab soffit and horizontally extending approximately 6'-0" on each side of the column center line, as shown on the Design Documents (the "Structural Drawings"). In one hundred fifty (150) lbs./SF live load areas, the drop panels may increase by 2" and may be further underlain with 6"/8" deep column capitals projecting 8" from each face of the columns, with slab thickness increase of 1"-2". The columns shall be of variable size. Generally, columns shall be 12" wide x 36/42" deep in the cores and 24" x 24" to 30" x 30" in the interior space and a maximum 22" x 34" at the perimeter, as shown on the Structural Drawings. The slab construction in bays exceeding 30' shall be essentially the same as noted above with thickness that may vary to 15-1/2" -24" and with drop panels approximately 7-1/2" deep. The roof construction (designed for sixteen (16) lbs./SF live load) shall be substantially the same as the floor construction described above. The wind/seismic lateral force restraining system for the Buildings shall be primarily the diaphragm action of the floor system distributing the lateral loads to the column support systems.

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8.7.4. Floor Plate Configuration. The floor plate configuration shall maximize the building perimeter to ensure efficient exterior office layout requirements for all Government enclosed offices. (See the POR attached as revised Schedule 5.2.1.) Base Building design shall be coordinated with Fit-Out design to yield efficient office modules of 150 square feet, inside dimensions, with a minimum office of 145 square feet, inside dimensions, per the Universal Plan deliverable, dated February 19, 2001 and accepted by the Government on March 15, 2001, which is hereby incorporated in this Lease by this reference. Where typical office floors are planned at Building A at floors 4 through 10 and Buildings B, C, D and E at floors 2 through 10, each floorplate will be provided to accommodate the Universal Plan. Specifically, each typical wedge, consisting of the structural bays from each core to the inside wall face below the perimeter windows, shall be able to yield nine (9) offices on levels 2-8 and six (6) offices on levels 9 and 10, accessed by two (2) 4'-10" minimum width corridors parallel with the core. Every reasonable effort will be made to minimize all vertical penetrations through the Occupiable Space, including wet stacks and chases for rain leaders, etc. The depth from the inside face of the exterior perimeter wall below the windows to the face of the building core wall shall be designed to optimize exposure to natural light and to maximize the efficiency of interior space planning and shall be a minimum of 57'-10" on the east-west axis of Buildings A, B, C, D and E.

8.7.5. Structural Floor. All adjoining floor areas must be of common level and non-slip surface, including access floor areas. No ramps shall be permitted for transition to access floor areas (e.g., Computer Facility, MDF room and switch room adjacent to the Computer Facility and Training Facility). Floor finish tolerances shall be 1/4" over 10' on a non-cumulative basis.

8.7.6. Structural Live Load Requirements. Office areas shall have a minimum live load capacity of 80 lbs./SF plus 20 lbs./SF for partitions. Bridges between the two wings in Building A shall not constitute office areas and shall have a design live load capacity of 50 psf. Roof areas shall be designed for 16 lbs./SF live load with snow drifting as required. A registered professional engineer shall provide, at no cost to the Government, written certification of the floor load capacity. A portion of each floor in the Buildings shall be capable of supporting a live load of 150 lbs./SF as shown on the Structural Drawings. Such specially upgraded floor loading capacity shall be adjacent to the building core. Size calculations of such upgraded areas shall not include Base Building Spaces (e.g., restrooms, lobbies, mechanical rooms).

8.8. Interior Architecture.

8.8.1. Entrances/Finishes for Base Building Spaces. The Lessor shall provide an overall main entry at Building A, which shall serve as a main exterior public entrance to the Buildings, together with a main entry to each of Buildings B, C, D and E. The main entry to each Building shall be integrated into the overall architectural design and shall be inviting and easily seen. The Government shall have the right to approve in writing the size, type and location of each sign to be provided in the main entry to each Building.

The Lessor shall provide vestibules or revolving doors at all main entrances. Revolving doors shall be sized to accommodate the maximum pedestrian traffic during morning and evening peak usage. Revolving doors, entrance doors and frames shall be fabricated from solid stainless steel shapes and details shall be solid stainless steel and coordinated with the overall

design of the Facility. At all main entrances, the Lessor shall control moisture on the floor by the use of recessed mats or drained walk off areas. Provisions shall be made for negative air pressure conditions in order to equalize air pressure. Entrance areas shall be well-illuminated and shall provide protection from weather (e.g., exterior canopy).

Materials and finishes to be used in Base Building Spaces are identified in the Design Documents.

8.8.2. Public Entrance Lobbies and Concourses. Lessor shall provide a ground level public entrance lobby in each Building which shall embody the quality and design of the rest of the Facility, as shown on the Design Documents. The architectural design should provide an aesthetic transition from outdoor to indoor space. The Lessor shall size and illuminate the public entrance lobbies for a view into the space from the outside, to set the tone and image for the whole structure, and to allow sufficient space for necessary circulation paths. Materials shall be durable, easily maintained, and reflective of the architectural character of the Building as reflected on the Design Documents. All sprinkler heads in public entrance lobbies shall be concealed.

The Lessor shall provide an interactive, automated building directory system integrated into the architectural design of each public entrance lobby, with the capacity to graphically list, direct, and identify occupant organizations and individual employees for the entire Facility. After occupancy, the Government shall have access to the software and other controls of such directory system, and shall be allowed to make changes to the directory at no cost to the Government. An information/security monitoring desk shall be integrated into each ground level public entrance lobby, together with a waiting and seating area off the main circulation pathways that can accommodate visitors. The desk, made primarily of stone and/or wood, shall accommodate technical support equipment required to oversee this operation.

The main entrances to Buildings B, C, D, and E shall all be located off the Campus Green. They shall face each other across the Campus Green with connecting walks, integrated into the design and construction of the Campus Green. Other than at the Campus Green entry for Building A, an elegantly designed metal and glass canopy shall be provided by Lessor at each Building entry which shall provide additional weather protection. A view into each of the lobbies shall be provided by the extensive use of glass at ground level and shall be augmented by the quality and nature of the lighting inside. The lobbies shall be accessible from the ground floor entrance via revolving doors. The main lobbies to Buildings B, C, D and E shall be double height spaces, as shown on the Design Documents.

The selection of the specific terrazzo and glazed or otherwise sealed brick color and pattern throughout the floors of the public entrance lobbies and the patterns of colors of the polyresin floors in the concourse walkways (not including elevator lobbies) shall be developed in close conjunction with the Government. The handrails on the ground floor level lobby looking down into the concourse level lobby shall be a combination of glass and stainless steel. The ceilings shall be drywall. Lighting shall be provided by recessed light fixtures as well as cove lighting and custom designed fixtures to provide an attractive lighting design incorporating abundant natural light.

The main entrance to Building A shall be a dynamic and functional space. Lessor shall provide entry to the Atrium of Building A from three locations; the main entrance shall be from the Campus Green at ground level and secondary entrances shall be provided off the concourse and off Eisenhower Avenue. The Multi-Purpose Room and the Cafeteria adjacent to the main lobby at the concourse level and the Public Search Room, accessed from Level 1, shall be accessible to Government employees and the public. Monumental stairs shall rise from the concourse level to Level 1 on either side of the Atrium. Floor areas shall "bridge" through the skylit space and shall provide a view to below and connect the various distinct components of the USPTO space.

An information/security desk made primarily of wood and/or stone shall be located at either side of the Building A Atrium to screen persons entering the elevator lobbies and to direct visitors to their appropriate destinations. Access to the elevator banks at the East and West cores shall be through security access control points.

8.8.3. Passenger Elevator Lobbies. Lessor shall provide passenger elevator lobbies on the public entry levels of the Buildings which shall reflect an architectural extension of the quality, expression, and lighting concepts developed for the main public entrance lobbies. Materials shall be durable, easily maintained, and reflective of the architectural character of the Buildings. The elevator lobbies shall have glazed or otherwise sealed brick and terrazzo floors and stone walls. Drywall ceilings with recessed light fixtures and indirect cove light construction are examples of suitable levels of ceiling design. All sprinkler heads shall be concealed. A combination of natural materials, such as full height granite, marble or furniture-grade wood, are examples of suitable wall-covering materials. The elevator doors, frames and accessories shall be high quality metal such as stainless steel to provide a durable and elegant finish.

The passenger elevator lobbies on the typical office floors shall be architecturally coordinated with the public entry lobbies and shall employ high-quality materials which are durable and easily maintained. Walls shall consist of a combination of four (4) foot high stone wainscot to match the main lobby, and drywall with a high quality wall covering; the elevator doors and frames shall be a baked enamel coated metal. The floor shall be a high quality carpet. The ceiling shall be painted drywall with concealed sprinkler heads. Decorative lighting, fluorescent down lights and cove lighting, for example, shall be provided as a contrast to the lighting for the office area. All interior corridors extending from passenger elevator lobbies (other than the ground-floor passenger elevator lobby) shall have a minimum width of 58".

8.8.4. Service Elevator Lobbies. Lessor shall provide service elevator lobbies on each Government-occupied floor. Service elevator lobbies shall be concealed from view from public lobbies and corridors. In all buildings, the service elevator lobby shall be set back from the outside of the core and shall provide a vestibule to hold items being transported within the building. Each service elevator lobby shall be: (i) a minimum depth of approximately two times the depth of the service elevator cab, and (ii) a minimum width of approximately one and one half times the width of the service elevator cab. Service elevator lobbies shall be excluded from the computation of occupiable square footage. Service elevator lobbies shall be finished with an extremely durable wall material. Floor material shall be a permanent and durable material with a coordinating base. All exposed outside wall corners shall be protected with

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stainless steel corner guards. The walls shall be heavy duty drywall construction with a plywood or textured laminated covering to a minimum of 60" above the finished floor.

Service corridors shall be finished using permanent and durable floor and base finishes. Walls shall be painted drywall over heavy duty studs with plywood wall sheathing with corner protection and exposed ceilings.

8.8.5. Cores and Public Corridors. Lessor shall provide the cores and public corridors as shown on the Design Documents.

8.8.6. Loading Dock. Loading docks and access drives thereto shall be provided by Lessor as shown on the Design Documents. Dock levelers of 5,000 pound capacity each shall be provided, one (1) at each dock (one for every two (2) bays). Separate secure holding rooms of 500 square feet each shall be located off the loading areas at Building B, C, D, and E which are directly accessible to the service elevator. In Building A, two (2) 500 square foot or larger holding areas shall be located adjacent to the docks, and a direct service corridor shall provide access to the service elevator.

The secured holding rooms shall be part of the Leased Premises and shall be built out with funds from the Fit-Out Allowance. Such secured holding rooms and loading dock temporary staging areas shall be proximate to rubbish compactors and dumpsters, and shall also be located proximate to a service elevator. The loading docks shall not be part of the Occupiable Space.

Loading docks shall be weather protected, shall not interfere with free circulation of vehicles in any on or off-street parking areas and shall be away or shielded from view of the Main Entrance, the main entrance to each building, the Child Care Center play yard areas, and the Cafeteria outdoor seating area. Neither of the two (2) required loading dock bays in each building shall be dedicated to trash dumpsters.

Lessor's responsibility for daily removal of trash, garbage and debris by truck and/or placement and use of dumpsters and/or trash containers, will not make use of the above listed bays, loading docks, dock levelers or holding rooms, except to the extent of necessary coordination required during actual pickup times.

Service elevator(s) shall be easily accessible and shall be located adjacent to each loading dock or accessible to each dock by a dedicated service corridor, which shall not be used as any portion of the public circulation system and which shall be included in the Base Building Space. The service corridor shall have a minimum height throughout of 8'-0" which cannot be reduced by bulkheads at any point, shall have a minimum width of 6'-0" and shall be constructed such that an object of 5'-0" x 7'-0" x 9'-0" can traverse the entire corridor. The loading dock size and location shall facilitate Government receiving and shipping functions and shall facilitate the servicing and operation of all building mechanical, electrical and communication equipment rooms, all of which shall be generally located in the building core, near the service elevators.

8.8.7. Toilet Rooms. As shown on the Design Documents, Lessor shall provide separate toilet facilities for men and women on each floor in the Buildings. Rest rooms are provided

for men and women and shall be each accessible from both sides of the core to minimize the travel distances from any point on the floor plate. No toilet room shall be located such that it is accessible to the public in advance of entering building security screening areas. Toilet room facilities shall be located so that employees will not be required to travel more than 200' on any floor to reach a toilet room. Each toilet room shall have sufficient water closets enclosed with modern stall partitions (constructed of durable and hygienic material), doors and, in men's toilet rooms, urinal screens. Each toilet room shall have both cold and hot (set at 110°F) water service. The hot water temperature shall be adjustable at the hot water heater. Water closets and lavatories shall have electronic activated faucets and valves.

Water closets and urinals shall not be visible when the toilet room entrance door is in the open position. Each separate toilet facility for women shall be provided with a full height mirror (approximately 6" above finished floor to 84" above finished floor) and a contiguous convenience counter, with mirror and lighting above the counter. Each toilet room shall contain the following:

- a mirror above each lavatory
- a toilet paper dispenser in each water closet stall that will hold at least two (2) toilet paper rolls and allow easy and unrestricted dispensing
- one (1) convenience shelf in each water closet stall
- one (1) coat hook on the inside door of each water closet stall
- coat hooks on several wall locations near the lavatories (three (3) total)
- at least one (1) recessed non-mechanical paper towel dispenser (which dispenses paper by touching the paper only), soap dispenser, and waste receptacle for every two (2) lavatories
- a coin operated sanitary napkin dispenser in women's toilet room with a sanitary napkin waste receptacle in each water closet stall
- stall or wall mounted disposable toilet seat cover dispenser for every water closet stall;
- counter areas at least 2' in length, exclusive of lavatories, with a mirror above and a ground-fault interrupt-type convenience outlet located adjacent to the counter area; counter areas shall be attached to the lavatories
- a separate convenience counter (having minimum dimensions of 3' x 18"), not adjacent to the lavatory, located in each men's toilet room

Toilet room finishes shall consist of durable and easily maintained materials. The walls shall be ceramic tile, installed from the floor to ceiling with ceiling height mirrors provided over the lavatory units. The ceiling shall be painted gypsum drywall. The toilet partitions shall be ceiling hung, to allow for easy maintenance, and the finish shall be steel baked enamel, color to be selected to complement stone countertops and ceramic tile. The floor material shall be a permanent, durable, non-slip ceramic coordinated with the wall material. All toilet room accessories shall be stainless steel finish. Countertops shall be fabricated from stone, with under-counter mounted lavatories, and with brushed stainless steel finish accessories. Countertops shall be sealed and impermeable to water.

8.8.8. Janitor Closets. The Lessor shall provide a minimum of one janitor closet for each floor (except that two (2) closets per floor in Building A shall be provided) with hot and cold water service, a service floor mop basin type receptacle, and ample storage for cleaning

equipment, materials and supplies. Ceilings shall be exposed construction, lighting shall be fluorescent fixtures and the doors and frames shall be painted hollow metal. Janitor closets may be located adjacent to toilet rooms but shall be physically separate from the toilet rooms.

8.8.9. Drinking Fountains. The Lessor shall provide a minimum of one (1) chilled drinking fountain within every 200' of travel distance on each floor. ADA and UFAS accessible drinking fountains shall be provided at four (4) locations in each core.

8.8.10. Public Telephones. The Lessor shall provide, adjacent to the main public entry lobby in each building, at least one (1) coin-operated touch-tone public telephone that is easily accessible to the public and that meets all criteria for accessibility by the hearing-impaired. Additional public telephones shall be provided based on a ratio of one per every 150,000 rentable square feet, or majority fraction thereof, of the rentable building area in excess of 200,000 square feet.

8.8.11. Stairways. Scissor stairs are not permitted. If required by Applicable Law, the Lessor shall provide additional fire exiting capacity in Base Building egress stairways to support assembly type functions in Joint Use Spaces, such as the Cafeteria, Multi-Purpose Room, Fitness Center, Child-Care Center, Public Search Facility and Training Facility. Open riser stairs (in Buildings) are not permitted. Stair treads shall be solid and shall have a non-slip abrasive nosing.

Within each of the five (5) buildings, to provide fire exiting for the office population, a minimum of two (2) separate sets of stairs in Building B, C and D, and a minimum of four (4) separate sets of stairs in Building A shall be provided by Lessor. The Government intends to use the Base Building egress stairways as convenience stairs for communicating between floors. Stairways shall be equipped by Lessor with adequate lighting and finishes to accommodate heavy daily employee usage, and shall contain door hardware that permits re-entry on each floor (to the extent permitted by Applicable Law). The stairs shall be concrete with a painted finish and an abrasive nosing, with metal handrail, painted drywall walls and painted ceilings, with functional and emergency lighting as required.

Fire egress corridors from fire stairs to the outside of the Building shall be constructed by Lessor. Where the corridors are intended solely for an escape route they shall be constructed of painted drywall construction. These corridors shall generally be located at the ground levels. Floors at the egress corridors shall be vinyl tile with a cove base. Ceilings shall be drywall or acoustic tile and the lighting shall be lay-in fluorescent fixtures.

8.8.12. Passenger Elevators. The Lessor shall provide passenger elevator service to all Building levels which include Occupiable Space. Service shall be available 24 hours per day. Elevators must have solid-state controls and be programmable to control access both during and after normal hours of operation and Lessor shall provide a card reader system for such purpose. The programming capability shall be flexible to minimize the cost of program changes and to allow the Government to program each card. The Lessor shall give the Government 24-hour advance notice for elevator service interruptions that will exceed ninety (90) minutes. Interruptions shall be scheduled to minimize Government inconvenience.

Passenger elevator system shall provide for comfortable acceleration, rapid transportation, smooth and rapid deceleration, automatic leveling at landings, and rapid loading and unloading at all floor levels served. The elevator systems shall provide for quick and quiet operation of doors, good floor indication (fully visible from cars and all portions of the elevator lobby), easily operated car and landing call buttons, and smooth, quiet, and safe operation of mechanical and electrical equipment for all conditions of loading.

Interior finishes of passenger elevator cabs shall reflect an architectural extension of the quality, expression and lighting concepts developed for the main public entrance lobby. Such interior finishes shall be of high quality design and durability, including high quality graphic design of elevator signage and controls. The passenger elevator cabs shall include the colors and materials found in the main lobby.

All passenger and service elevators shall be equipped with telephone or other two-way voice emergency signaling system. The two-way voice emergency signaling system used shall be marked and reach a manned emergency communication location within the Facility. Automatic elevator emergency recall is required.

8.8.13. Passenger Elevator Performance Criteria. ASME A17.1 shall be used to determine the allowable car area dimensions based on the load capacity of the passenger elevators. The size, number of cars, speed and capacity shall be determined to serve the anticipated number of passengers and provide the level of service as specified below, except that cabs shall have a minimum capacity of 4,000 lbs. At least one (1) car per building shall be sized to accommodate a gurney or stretcher and configured to operate "out of bank" (i.e., independently on demand).

The size, speed and number of passenger elevators shall have the capacity to transport sixteen percent (16%) of the building population above the first floor entry level in five (5) minutes. The floor population for elevator passenger calculations shall be based upon 155 occupiable square feet per person. The dispatch interval between elevators during all time periods (peak or off-peak) shall not exceed thirty (30) seconds. When groups of elevators servicing identical floors are necessary at two (2) or more locations (in order to meet minimum travel requirements and reasonable convenience), the elevator bank configuration and grouping shall provide a minimum combination carrying capacity of not less than one hundred twenty percent (120%) of the maximum traffic peak. Service elevators shall not be included in calculating carrying capacity for passenger elevators.

In compliance with the performance specifications set forth above, Lessor shall provide a vertical transportation (elevators) system which provides at least sixteen (16) elevators (each shall serve all 11 floors) in Building A and eight (8) elevators (each shall serve all 11 floors) in each of Buildings B, C, D and E. Service elevators required by Section 8.8.14 are in addition to the foregoing. The elevators serving the office floors in the east wing of Building A shall be programmed to by-pass the two (2) floors of the Public Search Facility and shall be for use by the employees of the Government only. Additionally, the Public Search Facility shall have a dedicated elevator to carry searchers between Level 1 and Level 2 within the security envelope of such area. Lessor shall also provide a dedicated elevator for handicapped access between the concourse level and Level 1 of Building A adjacent to the Atrium and a

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dedicated elevator from the Child Care Center on Level 1 of Building C to the concourse level of Building C to provide access to the Child Care Center play yard.

8.8.14. Service Elevators. Lessor shall provide in each Building a minimum of one (1) service elevator to service up to the first 400,000 inside gross square feet in the building. Additional service elevators shall be provided based on one (1) elevator per every additional 400,000 inside gross square feet, or majority fraction thereof, of building area. Service elevators shall service all levels above and below grade that contain Occupiable Space, including that level on which the loading dock is located. One service elevator shall be adjacent to each loading dock area or accessible to each dock by a service corridor, which shall not be used as any portion of the public circulation system and which shall be part of the Base Building Space. The service corridor shall have a minimum height throughout of 8'-0" which cannot be reduced by bulkheads at any point, shall have a minimum width of 6'-0" and shall be constructed such that an object of 5'-0" x 7'-0" x 9'-0" can traverse the entire corridor. Inside clear dimensions of service elevator cabs shall be a minimum of 6' wide by 8' deep and 10' high; cab entrances shall be a minimum of 48" clear. All service elevators shall have a minimum loading capacity of four thousand (4,000) pounds. Service elevators must have solid-state controls and be programmable to control access both during and after normal hours of operation and Lessor shall provide a card reader system for such purpose. Building A shall contain two (2) service elevators, and Buildings B, C, D, and E shall contain one (1) service elevator each.

8.8.15. Service Shafts. In addition to any shafts or chases required for Base Building mechanical or electrical distribution, the Lessor shall provide service shafts to accommodate mechanical, electrical, plumbing and/or telecommunications distribution related to the Fit-Out per the POR attached as Schedule 5.2.1. Each shaft shall extend from the lowest occupied floor through the roof and shall be vertically stacked. Each shaft shall be remotely located from the core, in a location to be reasonably determined by the Government during completion of the Base Building design. Each shaft shall include fire-rated walls as required, one (1) access panel per floor in a location to be determined by the Government and appropriate moisture protection at the roof penetration. The cost of any distribution installed within the shafts, and the fire protection required at entrances to the shafts, shall be funded from the Fit-Out Allowance. The service shafts and their surrounding walls shall be deducted from the gross area in calculating the quantity of rentable square footage and Occupiable Space.

8.9. Acoustics.

8.9.1. Intentionally Omitted.

8.9.2. Building Exterior Noise. Equipment or systems producing noise external to the Buildings, such as cooling towers, power generators, and garage exhaust systems, shall include appropriate noise control measures in order to comply with the noise criteria for Occupiable Space stated elsewhere in this Lease and to comply with local ordinances regarding noise impact on neighboring properties.

8.9.3. Structural Acoustic Design Criteria. Structural floor slabs supporting or located above mechanical equipment shall be of sufficient mass to adequately control the transmission of airborne noise to vertically adjacent spaces, and provide a rigid surface on which to mount

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vibration-isolated equipment and piping, all of which shall be designed to avoid structure-borne noise transmission to nearby occupied spaces. Structural floor slabs shall have the following minimum weights.

Beneath cooling towers:	85 lbs./SF
Ground floor slab above all generator rooms:	100 lbs./SF
Ground floor slab above all chiller rooms:	105 lbs./SF
Floor slabs within column bays supporting local floor fan rooms:	75 lbs./SF

8.9.4. Vibration Isolation. All rotating/reciprocating/vibrating mechanical equipment shall be provided with appropriate vibration isolators, vibration isolation bases, and seismic restraints and snubbers to give uniform loading and deflection for vibration isolation from the building structure. Isolation, both mechanically and electrically, shall be provided in compliance with Code and the established performance criteria. In addition, all piping connected to vibration-isolated equipment shall be vibration isolated from the building structure within mechanical rooms or for a distance of 50' from the equipment, whichever is greater. Main components of the elevator controls and hoist shall be resiliently connected to the Buildings in order to minimize structure-born noise. All major floor mounted equipment shall be provided with a housekeeping pad.

8.9.5. Acoustic Sound Transmission Class. The design and construction for acoustic separation of spaces shall meet or exceed the Sound Transmission Class ("STC") rating as follows:

Space/Adjacency	STC Rating
Office Space/Office Space	40
Mechanical Equipment Room/Adjacent Occupiable Space:	50
Toilet Rooms/Adjacent Occupiable Space:	50
Toilet Room/Adjacent Toilet Room:	45
Occupiable Space/Adjacent Joint Use Spaces:	50
Elevator Shaft/Adjacent Occupiable Space:	45
Corridor or Lobby/Adjacent Occupiable Space:	45

The Lessor shall conduct measurements and shall certify to the Government that such measurements demonstrate that the following Joint Use Spaces satisfy the above acoustic performance criteria when measured, after Government occupancy, against adjacent spaces: the Multi-Purpose Room, the Public Search Facility, all Hearing Rooms and the Training Facility.

8.9.6. Acoustic Noise Criteria. The design and construction shall meet the Noise Criteria ("NC") rating as follows:

Space	Noise Criteria
Multi-Purpose Room	20 ¹

Computer Facility	40
Training Facility	30 ²
Private Offices	35
Open Offices	40
Public Search Facility	30 ²
Public Corridors	40
Entrance and Elevator Lobbies	40
Receiving Areas and Parking Garages	50
Child Care Center	35 ²
Fitness Center	35
Cafeteria	40
Mechanical and Electrical Equipment Rooms	50
Toilet Rooms	50

Footnote 1: The reverberation time shall be approximately one (1.0) second.

Footnote 2: The reverberation time shall be approximately one-half (0.5) second.

Mechanical equipment located outdoors, including cooling towers and fans, shall include appropriate noise control measures, such as proper equipment selection, in order to comply with the noise criteria for interior occupied spaces as well as to comply with local ordinances regarding noise impact on neighboring properties.

8.10. Mechanical. The mechanical system shall consist of heating, ventilating and air conditioning ("HVAC"), plumbing, and fire protection systems.

Lessor shall provide HVAC systems which include the equipment necessary to provide complete cooling, heating, humidity control, filtration, ventilation, and air distribution systems (limited to ductwork stubbed out on each floor at the mechanical room/shaft to the Occupiable Space, except as otherwise directly set forth below as to certain Joint Use Spaces) for an operational, quiet, and comfortable environment in the Buildings. Consideration shall be given to energy conservation features in system design. Base Building Spaces shall be serviced by floor-by-floor air handling units (chilled water coils), terminal boxes with electric reheat (if required) and centrifugal chillers. If required in Section 8.10 or 8.15, Joint Use Spaces shall be serviced by independent air handling units located near the Joint Use Spaces. Water side economizers shall be provided to service winter chilled water requirements in accordance with applicable energy Codes. Air flow shall be as indicated on the Design Documents. The major HVAC equipment shall be located in the penthouse and on the roof of each building with the AHU's servicing the concourse through Level 8 being located on the individual floors and with the AHU's servicing Levels 9-10 being located at the mechanical penthouse. Roof top equipment including cooling towers shall be screened so that equipment cannot be observed from ground level. Lessor shall provide the plumbing systems which include domestic hot and cold water supply, sanitary drainage, storm drainage, and plumbing fixtures in Base Building Spaces. Lessor shall provide the fire protection systems which include all primary distribution piping (risers, fire department connections, stand pipes, pumps, and fire annunciator inter-connects), supply lines stubbed in to the Occupiable Space from the stand pipe(s) located in the stairtower(s), and the complete sprinkler systems including horizontal piping, drops and sprinkler heads in Base Building

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Spaces and the information technology facilities as provided in Sections 8.12.2, 8.12.3, 8.12.4 and 8.15.2, in accordance with Sections 7.5 through 7.9 of this Lease.

8.10.1. Fuel Source. The energy source for the cooling systems shall be electricity to power electric chillers and cooling towers. The primary energy source for the outside air heating systems shall be natural gas.

8.10.2. Environmental Requirements. The HVAC systems shall be able to establish and maintain temperatures (i) for certain Joint Use Spaces (e.g., the Computer Facility), at the temperature and humidity levels set forth in Section 8.15.2; (ii) for the main communication vaults and switch room, MDF rooms and communication rooms at 68 ± 2 degrees Fahrenheit and $45\% \pm 5\%$ relative humidity for 24 hours per day, year round; and (iii) for all other areas, between 68°F and 72°F during the heating season and between 70°F and 74°F during the cooling season. These temperatures must be maintained throughout the Leased Premises and conditioned Base Building Spaces, regardless of outside temperatures, during the hours of operation specified in this Lease. Simultaneous heating and cooling within a single zone shall not be permitted, except as included as part of terminal boxes with electric reheat. Relative humidity shall be maintained between thirty percent (30%) and sixty percent (60%) during the hours of operation specified in this Lease. Steam generating humidifiers shall be provided. Evaporative humidification shall not be permitted. Heat recovery (in lieu of reheat) shall be used to control humidity in systems in which outside air percentages may be overridden by Indoor Air Quality sensors.

During non-working hours, unless overtime services are requested pursuant to Section 6.4.2, temperatures shall be set no higher than 55°F during the winter season and no lower than 85°F during the summer season, and air conditioning will not be required. In areas where there is the possibility of pipe freezing, the Lessor shall provide heating equipment to maintain an ambient 55°F environment.

The HVAC system shall provide maximum temperature control and the capability to incrementally isolate approximately one half of each floor in each of Buildings B, C, D and E and approximately one-quarter of each floor in Building A. No individual terminal unit shall be sized in excess of 1,000 cfm. Individual thermostats shall be provided (as part of Base Building in Base Building Spaces only and the thermostat control system and backbone shall be capable of providing service for thermostats which control a maximum of 1,000 square feet in the Occupiable Space) and shall control a maximum of 1,000 occupiable square feet. All thermostatic controls shall be tamper resistant.

The outdoor weather conditions to be used for designing HVAC systems shall be based on the data identified in the then-current edition of the ASHRAE Handbook of Fundamentals for Washington National Airport, Virginia.

Summer	92°F dry bulb	76°F wet bulb	(1% occurrence of each cooling season-June through September-at or above the dry bulb temperature and associated mean coincident wet bulb)
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Winter	10°F dry bulb	0% RH	(99.6% occurrence of each heating season-December through February-at or below the dry bulb temperature) (1% occurrence of each cooling season-June through September-at or above the dry bulb temperature; this wet bulb is independent of the dry bulb values and is not coincident with the design dry bulb listed above; i.e., used for cooling tower selection)
Summer	78°F wet bulb		

The occupied indoor conditions during working hours to be used for designing HVAC systems shall be based on the following conditions, unless otherwise noted.

Summer	72°F ±2°F dry bulb	30-60% RH
Winter	70°F ±2°F dry bulb	30-60% RH

The indoor conditions for the Computer Facility shall be based on the following conditions.

Summer	68°F ±2°F dry bulb	45% ±5% RH
Winter	68°F ±2°F dry bulb	45% ±5% RH

The indoor conditions for the Child Care Center shall be based on the following conditions.

Summer	75-78°F ±2°F dry bulb	50% ±10% RH
Winter	75-78°F ±2°F dry bulb	50% ±10%RH

The indoor conditions for the Public Search Facility shall be based on the following conditions.

Summer	72°F ±2°F dry bulb	50% ±10% RH
Winter	70°F ±2°F dry bulb	50% ±10% RH

The indoor conditions for the kitchen shall be based on the following conditions.

Summer	80°F
Winter	65°F

The indoor conditions during non-working hours to be used for designing HVAC systems shall be based on the following conditions.

Summer	85°F dry bulb minimum
Winter	55°F dry bulb maximum

Internal heat gains from lighting, electric, people, and other heat generating sources shall be used to determine the internal load. The internal loads shall be used in the final design calculations and for sizing the HVAC and utility systems. The occupancy density for the Occupiable Space shall be in accordance with the applicable building Code. The cooling

systems shall be capable of accommodating a maximum electric load for the Occupiable Space of 5.5 W per square foot at 50% diversity or 2.75 W per square foot including diversity. This electric load shall account for tenant equipment and computer heat load. The cooling systems shall be capable of accommodating a maximum lighting load for the Occupiable Space of 1.7 W per square foot.

The cooling systems shall be capable of cooling the following rooms 24 hours per day.

- the switch room (see Section 8.12.2) - ten (10) tons of cooling total (or 150 square feet per ton)
- each MDF room, MDF/UPS room and MDF/vault (see Section 8.12.3) - capable of cooling 50 watts per square foot
- each communication room, comprised of one (1) Telephone Room and one (1) LAN Room (see Section 8.12.4) - one (1) ton of cooling total (or 200 square feet per ton)

The following indoor air quality design features shall be implemented:

- the building materials, furnishings, and finishes shall be selected to minimize volatile organic compounds ("VOCs") which are air pollutants found in many common building materials
- the HVAC systems shall be designed to purge the Buildings before occupancy to lower the VOC level
- the building materials, furnishings, and finishes shall be selected to minimize absorption and desorption rates to prevent pollutants from staying within the Buildings
- the HVAC systems shall be designed to provide a comfortable environment, including temperature and humidity
- the ventilation, or outdoor air, rate shall be in accordance with, but in no event less than, current Code or as required to maintain a maximum CO₂ concentration of one thousand (1,000) ppm, whichever is greater; this minimum rate shall be assured by a dedicated outside air fan to supply outside air to the air handling units during normal working hours
- the outdoor air intakes shall not be located near sources of contamination; as an added measure of safety, building fresh air intakes shall be from the roof of the buildings
- the supply air to the Occupiable Space shall be filtered with sixty-five percent (65%) efficient cartridge type filters to provide clean air
- all air handling unit chilled water coils shall have stainless steel, double sloped drain pans to assure that there is no standing water that can promote the growth of microorganisms; the associated drain pan traps shall be sized to prevent condensate carry over
- all air handling unit chilled water coils shall be sized for a velocity that shall prevent water carry over
- interior duct lining shall be kept to a minimum and shall not be allowed within the absorption distance of humidifiers; all duct lining shall be treated to minimize erosion and prevent microbial growth
- all air handling units shall be of double wall construction

- all exterior ductwork insulation shall be installed to prevent loose fibers from entering the occupied spaces
- all sound attenuators shall be packless and/or cleanable type suitable for hospital and clean room applications
- all humidifiers shall be self contained steam generating type with minimal or no chemical treatment to prevent chemicals from being supplied to the Occupiable Space
- the HVAC systems shall be designed to maintain directional air flow between adjacent spaces to control odor and humidity for rooms such as restrooms and kitchens; this shall also prevent undesired recirculation of harmful indoor air contaminants; directional air flow shall be achieved by making up or exhausting the required air flow quantities
- the HVAC systems shall be designed to maintain a positive building pressure to minimize infiltration of untreated air and pollutants by supplying at least 0.02 cfm per square foot more outside air than the total air exhausted or mechanically relieved from the building
- the HVAC systems shall be designed to maintain a sufficient amount of airflow during all times, summer and winter as prescribed by Code for the utilization of the particular space
- all mechanical equipment shall be designed with appropriate maintenance space to provide access in cleaning the equipment

8.10.3. HVAC System Components. The Lessor shall provide HVAC systems capable of supporting and accommodating variable volume terminal distribution and control. The HVAC systems shall include provisions for increasing the outside air percentage when supply air is throttled due to low loads and shall meet or exceed ASHRAE ventilation requirements in place as of the date of the design. The HVAC systems shall accommodate a maximum of 9.4 BTUH per square foot (2.75 W per square foot power plus 1.75 W per square foot lights) for tenant equipment and computer heat gain load for all Occupiable Space or as otherwise specified in the Joint Use Space requirements. The HVAC systems shall also accommodate a partial loading requirement from the maximum design load down to 0.0 BTUH per occupiable square foot. No additional diversity factor shall be considered for tenant equipment and computer heat gain loads.

Variable air volume ("VAV") or a functionally comparable system providing maximum flexible zoning conditions and independent temperature control is required. A system is considered functionally comparable if it achieves the same control and capacity as a VAV system in cooling, heating, air movement, outside air supply, zoning flexibility, uniformity of temperature, filtering, efficiency, humidity control, quietness and other relevant operational parameters. Air handling units shall utilize fans with inlet vane or variable frequency drives for variable volume control. The Lessor shall provide exhaust fans for smoke control in the event of fire. All fans shall be capable of operating in a stable range for both maximum and minimum operating conditions. Air handling unit filtration efficiency shall be at least sixty-five percent (65%) as measured by ASHRAE 52-76.

The Lessor shall provide air handling units with a water side economizer cycle. VAV units shall be capable of operating at full and part load demand, and shall be system pressure

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independent. Areas having excessive heat gain or loss, or affected by solar radiation at different times of the day, shall be independently controlled.

VAV air systems shall have an air flow measuring station at all fan units in Base Building Spaces, and shall have the capability of supporting air flow measuring stations at all fan units in Occupiable Spaces. All building core functions and exterior perimeter diffusers and registers shall have manual balancing dampers.

The primary air distribution system shall consist of air handling units (AHUs) serving the Base Building Spaces and the Occupiable Space, terminal boxes for either VAV or CV operation in Base Building Spaces, and ductwork mains (stubbed out from Base Building mechanical rooms/shafts at each floor space) to the secondary air distribution systems as more particularly described in Section 8.10.8.

The following Joint Use Spaces shall have independent HVAC systems (AHUs):

- Multi-Purpose Room
- Fitness Center
- Cafeteria
- Public Search Facility
- Training Facility

The AHUs shall consist of the following components:

- supply fans with VFDs and air measuring stations; centrifugal type fans; plug type fans shall be considered for quieter operation
- economizer sections for air side economizer with outside air fan for IAQ concerns
- filters; class 1 30% and 65% cartridge type filters
- chilled water coils with stainless steel, double sloped IAQ drain pans
- access sections; adequate quantity for easy maintenance
- steam humidifiers as required; provided in the outside air units; self contained type; evaporative humidification shall not be permitted
- supply and return sound attenuators (if required to achieve sound levels indicated in Section 8.9.6); duct mounted; packless and/or lined type for IAQ concerns

AHUs shall have all safeties hard wired external to the building automation system (BAS). Each AHU supply duct system shall include a pressure relief door located in the mechanical equipment room to prevent over-pressurization of the ductwork. In outside air units, manual reset freezestat upstream of the cooling coil shall de-energize the air handling unit whenever it detects a fall in temperature to its setpoint. Upon detection of smoke in the supply or return air duct, the AHU shall be de-energized. All safety devices must be proven both in the manual and automatic mode before the AHU can start. A static pressure sensor located downstream of the supply fan shall modulate the variable speed drives to maintain a constant system pressure in response to filter loading and variances in air distribution. The supply air temperature shall be reset based on polling of the zone temperature sensors to ensure satisfaction of system cooling demands while preventing supply air from dropping below equipment minimums. Night set-back and morning warm-up controls shall be provided.

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The secondary air distribution system (which shall be provided in all Base Building Spaces and for certain Joint Use Spaces, as specified below, as part of the Base Building) shall consist of terminal boxes, air terminals (diffusers, grilles, and registers) and the ductwork from the primary system to the terminal boxes and air terminals. Each air terminal shall have a manual volume damper to regulate the air flow rate. These dampers shall be located close to the main to reduce noise levels. Terminal boxes (as part of the Base Building in Base Building Spaces only) shall be pressure independent and shall be provided with electric reheat coils, as necessary. Perimeter zones shall utilize fan powered parallel VAV boxes with electric reheat. Interior zones shall utilize cooling-only VAV boxes except that reheat coils shall be used for areas where heating is required. Base building electrical infrastructure shall be designed to accommodate anticipated tenant installation of fan powered and reheat boxes. The capacity of terminal boxes shall be limited to 1,000 cfm, and shall not serve more than 1,000 square feet. The minimum position of fifty percent (50%) at terminal VAV boxes shall be considered for IAQ concerns (or 30% for reheat boxes per the applicable energy Code). Each terminal box shall be provided with a tamper resistant thermostat. The reheat coils shall be used where the terminal boxes serve perimeter or roof areas (areas within 15' of perimeters or roofs). Lessor shall provide local mounted humidifiers, if necessary, for areas requiring additional humidity control to meet the humidification requirements of this Lease. The air distribution system shall be zoned such that areas having excessive heat gain or loss, or affected by solar radiation at different times of the day, shall be independently controlled. Branch ductwork shall be connected or "looped" to provide flexibility for the secondary air distribution system during the Fit-Out.

The air from conditioned spaces shall either exfiltrate to the outdoors or shall be exhausted or returned back to the AHU. Each Building design shall accommodate a return air ceiling plenum. Return air shall flow from the conditioned spaces to the ceiling plenum through a return air grille and transfer ducts (as required) to the return air duct. For AHUs serving the general purpose spaces, return air shall flow through ductwork connected to each mechanical room.

The Lessor shall provide computer room air conditioning units (CRAC) in the following areas:

- Computer Facility
- interim data center in Building E
- main communication vault and switch room
- MDF rooms
- communication rooms

8.10.4. Ductwork. Ductwork shall be sized using the balanced pressure method from the then-current edition of the ASHRAE Handbook of Fundamentals. Duct leakage requirements shall not exceed three percent (3%) and shall be tested in accordance with the then-current SMACNA Duct Standards. No sound lining shall be permitted within 10' of cooling coils or within the absorption distance of humidifiers, unless such lining is protected from moisture penetration through the use of vapor barriers, non-absorptive insulation, etc. All ductwork shall be insulated and sealed to prevent condensation. All ductwork, unless noted otherwise, shall be galvanized sheet metal. All ductwork shall be sealed to class A standards. Supply air ductwork shall be constructed to six (6) inch pressure class upstream of terminal boxes and two (2) inch pressure class downstream of terminal boxes. Exhaust, return, and outside air

ductwork shall be constructed of four (4) inch pressure class. In unconditioned areas, all supply air, outside air, and return air ductwork shall be externally insulated with a vapor barrier.

8.10.5. Control Systems. Direct digital controls are required. For all major mechanical equipment, the Lessor shall provide lead-lag type controls and automatic sequences. Chillers shall interlock with respective condenser and chilled water pumps. Flow shall be proven through both evaporator and condenser before chiller start. All major mechanical equipment except chillers shall be controlled by hands-off-automatic switches.

All Occupiable Space shall be serviced by a comprehensive building automation system ("BAS") and centralized energy management control system ("EMCS") capable of control, regulation, monitoring, and operational optimization of all environmental conditioning equipment and electrical systems. The BAS shall be fully supported by a service and maintenance contract. The Lessor shall provide an automatic temperature control system for each building which is connected into a centralized EMCS.

The BAS shall control, regulate, monitor, log, and optimally operate the HVAC and electrical systems including, but not limited to, temperature, humidity, AHUs, exhaust fans, chillers, cooling towers, pumps, and electrical distribution systems. The BAS shall include, but not be limited to, a complete BAS system, including field controllers, input/output, work station, and communications network (with capability of communicating with systems in other buildings); all field instrumentation including valves, sensors, dampers, and relays; cabinets and other mounting equipment; custom third party equipment interfaces; and system software including operating systems, compilers, configurations, database management software, diagnostics, data acquisition, process control, energy usage totalization, and scheduling. The BAS panels shall be expandable by adding additional input/output logic cards that operate through the processor of the BAS panel. The system console shall be at least a Pentium based computer and shall be provided with a printer. The console shall include a color graphics display unit, a standard keyboard, and a modem. The BAS shall be provided with interactive color graphics. Each system shall be displayed separately as depicted on the instrumentation and mechanical drawings. Control valves and damper operators shall be either electric/electronic or pneumatic. All major mechanical equipment shall be provided with lead-lag type controls and automatic sequences. All BAS controlled fans and pumps shall be provided with current sensor to monitor equipment status.

8.10.6. Piping and Fluid Distribution. No HVAC piping shall extend more than 150' vertically from the high to the low points of the system. Maximum system operating pressure shall not exceed two hundred (200) psi, and maximum distribution temperature shall not exceed 200°F.

HVAC Piping shall be sized for a maximum friction loss of 4' per 100' of straight pipe. Maximum pipe velocity shall not exceed 4' per second in pipes equal to or less than 6" in diameter. Pipe velocity shall not exceed 8' per second in pipes greater than 6" in diameter. The Lessor shall provide stand-by pumps for each HVAC system. HVAC Pumps shall not operate above 1,750 RPM. The Lessor shall provide flow-measuring devices and flow-balancing devices on all major systems at each circulating pump. The Lessor shall provide flow-regulation devices and appropriate gauges at connections to all pieces of heating and

cooling equipment. The Lessor shall provide balancing valves with memory recall, and shall also provide valves and by-pass piping to isolate all equipment for maintenance and repair. Piping connections for future reserve capacity equipment shall be valved and capped.

The Lessor shall provide manual air vents at all HVAC pipe system high points, and shall provide, at all system low points, hose type drain valves. The Lessor shall also provide a diaphragm-type expansion tank for all closed HVAC piping systems. All closed heating systems shall have pot feeders and chemical treatment to inhibit corrosion, bacterial growth, and scale deposits.

The Facility shall be serviced by separate storm drainage and sanitary waste systems. Roofs shall be drained by gravity through inside leaders, house drains, and house sewers to site sewers. The storm drainage system shall be sized to meet the fifty (50) year rainfall. Plumbing fixtures above grade shall be drained by gravity through inside leaders, house drains, and house sewers to site sewers. Loading dock and kitchen drains shall be run through oil and sediment interceptors and sump pumps, as required, to the gravity sanitary drainage system. Plumbing fixtures below grade shall be drained by gravity to duplex sewage ejectors and then pumped, as required, to the gravity sanitary drainage system. Plumbing vents shall be routed to the roof.

Plumbing fixtures shall include, but not be limited to, sinks, lavatories, water closets, and drinking fountains. Water closets and lavatory faucets and valves shall be electronically activated. Janitor closets shall be provided with a service floor mop basin type receptacle. Chilled water drinking fountains shall be located within every 200' of travel distance on each floor and shall conform to ARI 1010 and UL 399. Appropriate fixtures and controls shall be provided for access to disabled persons in accordance with ADA and UFAS.

The Site shall be serviced by the public water distribution system. The water services shall be metered. Domestic water shall be distributed through mains, risers, and branches to plumbing fixtures and equipment. If available water pressure is inadequate, a pressure booster pump system (triplex type) shall be provided. A minimum of 25 psi residual pressure shall be provided at the highest plumbing fixture in the Occupiable Space. Domestic water system shall be zoned to limit the pressure at plumbing fixtures and equipment to 80 psi maximum. The water supply system shall be pressure zoned or otherwise controlled not to exceed this maximum pressure. Backflow preventors shall be provided throughout the domestic water system to prevent backflow of water by the use of air gaps or backflow prevention devices. Systems shall be designed to prevent water hammer conditions by providing air chambers for fixtures and shock arresters for quick closing valves.

Cold water shall be supplied to rooms and equipment including, but not limited to, the following:

- each toilet room
- janitor closets
- drinking fountains
- kitchens

Riser piping that can accommodate plumbing fixtures shall be provided for the following Joint Use Spaces:

- Multi-Purpose Room
- Computer Facility
- Child Care Center
- Fitness Center
- Cafeteria
- Health Unit
- Training Facility

Lessor shall provide each Building with one or more water heaters located in the Building penthouse, as well as adequately sized vertical piping to an insulated loop with stub-outs and valves on each building floor, which insulated loop shall be part of Base Building to the extent serving Base Building spaces and shall be part of Fit-Out to the extent serving Fit-Out spaces. Such insulated piping loop shall be capable of delivering water at a minimum of 110 degrees F at all fixtures. Water heaters will be fueled by natural gas. A recirculation system shall be provided if a hot water user is greater than 100' of piping from the heater source.

Hot water shall be supplied to rooms and equipment including, but not limited to, the following:

- each Base Building toilet room
- janitor closets

Natural gas shall be extended from the street main with a meter and regulator located outdoors. Natural gas shall be provided to the required equipment. All natural gas fired equipment shall be provided with necessary pressure regulators and associated vent lines.

8.10.7. Heating System. For the heating systems, the Lessor shall provide outside air units with indirect natural gas heating and terminal electric heat/reheat. An enthalpy wheel to pre-treat the outside air may be used if determined by the Lessor and approved by the Government.

8.10.8. Cooling System. The Lessor shall provide chillers, pumps, cooling towers, condensing water systems, and other major components, as necessary, so that when an individual component is non-operational, the remaining components shall maintain normal operational temperature and humidity during normal hours of operation and any extended hours of operation. The Lessor shall provide a minimum of two (2) chillers per building. The Lessor shall also provide, in each building, future adjacent expansion space for one (1) additional chiller and associated pumps, cooling tower and equipment of equivalent size to the largest chiller located in the building. The chilled water systems for each building shall be tied into a campus loop to provide chiller redundancy and to facilitate part load operation. The Lessor shall provide chilled water systems with a "one shot feeder" chemical feed system for water treatment. Water condenser systems with an automatic chemical feed and bleed system and with a solid separator shall be provided.

The Lessor shall provide a dedicated pumping system (risers, cooling towers and other necessary equipment) for each condenser water loop and for any chilled water loop serving

dedicated, 24-hour operation areas (e.g., the Computer Facility, main communication vaults, switch room, MDF rooms, and communication rooms). The 24-hour chilled water loop for each building shall be tied into the building loop for redundancy.

All chilled water piping shall be insulated. All condenser water piping shall be insulated when water side economizer cycles are used. All exterior piping subject to freezing shall be heat taped and insulated. Each cooling tower shall include sump heaters for freeze protection. Each cooling tower shall have a separate cell for each chiller. Each cell shall have a separate basin or separate section of a common basin. Domestic water shall not be utilized as condensing medium. The Lessor shall provide a solids separator for the condenser water system. The Lessor shall provide variable frequency drive for cooling tower motors. Cooling towers shall not be mounted on grade level. Each system shall include a make-up cold water connection. The Lessor shall provide a quick-fill connection for the condenser water system. The Lessor shall provide valve and cap connections in at least one central location per floor for Government future chilled water requirements.

The HVAC system located in the penthouse shall provide chilled water for the AHU cooling coils and Government future 24-hour chilled water requirements, and shall consist of the following components:

- a minimum of two (2) chillers shall be provided per building;
 - each chiller shall be sized at 55% of the building load, redundancy shall be provided by tie-in to a campus chilled water loop
 - electric centrifugal type; reciprocating or screw chillers shall not be permitted except for 24-hour chilled water system
 - power input shall not exceed 0.55 kW/ton at full load capacity inclusive of ARI 550
 - refrigerant sensors, alarms, and breathing apparatus shall be provided in accordance with ASHRAE Standard 15
- cooling towers
 - a minimum of one (1) cell per chiller
 - each cell shall have a separate basin or separate section of a common basin
 - induced mechanical draft, cross flow heat transfer type
 - VFDs and motors
 - basin water make-up connections located on the roof, not on grade level
- heat exchanger
 - plate and flame type for water-side economizer
- pumps
 - a stand-by pump shall be provided so that when one is down, normal operational temperature requirements can be maintained
- expansion tank - diaphragm type for the closed loop chilled water air separator for the closed loop chilled water
- piping and piping accessories for a closed loop system for the chilled water
 - all chilled water piping shall be insulated
 - piping and piping accessories for an open loop system for the condenser water
 - all condenser water piping shall be insulated where a waterside economizer is used
- chemical treatment

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- automatic chemical feed (inhibitor and two (2) biocides) and bleed system for the condenser water
- a solids separator for the condenser water
- a shot feeder to inhibit corrosion, bacterial growth, slime mold and scale deposits for the closed loop chilled water

All chillers shall be interlocked with their respective condenser and chilled water pumps. Flow shall be proven through both the evaporator and condenser before the chiller start.

8.10.9. Exhaust Systems. The Lessor shall exhaust one hundred percent (100%) of supply air (or in accordance with the minimum Code requirement) from all Base Building toilet rooms, locker rooms and other sources of humidity and/or odor to the building exterior at roof level, with negative pressure maintained in all such areas. The Lessor shall provide auxiliary exhaust risers capable of supporting the Government's requirements for all Joint Use Spaces as well as the Government's distributed space requirements in the Occupiable Space (e.g., galleys, copy rooms and conference rooms), and the horizontal tie-in (e.g., ductwork) from the Occupiable Space to the exhaust risers (except for the galleys, copy rooms and conference rooms as set forth below). See Section 8.15 and the POR attached as revised Schedule 5.2.1.

Stairwell pressurization for building Code compliance shall be provided by Lessor to the extent required by Code. If required, each stairwell shall have a fan supplying air through a shaft adjacent to the stairwell with relief openings at the top of the stairwell. The Atrium shall be provided with exhaust fans at the top of the Atrium to the extent required by Code.

Lessor shall provide, except as otherwise set forth herein, the following exhaust systems:

- toilet, janitor closet, and locker room exhausts to exhaust one hundred percent (100%) of supply (or in accordance with the minimum Code requirement) to the roof and provide a negative room pressure relative to adjacent spaces
- modulating exhaust fans and associated control dampers to enable floor-by-floor isolation of system exhaust corresponding to operation of floor-by-floor AHU's
- electrical room exhaust, to exhaust room air from each electrical room into the exhaust system
- galley, copy room and conference room exhaust and fans in the ceiling of each room (as required in, and paid for from the Fit-Out Allowance); galley room and copy room shall exhaust room air to the outside via the riser; conference room shall exhaust air into the ceiling plenum or to the outside via a riser (provided as part of the Base Building)
- Utility room (fuel oil pump room, trash room, etc.) exhaust, to exhaust Code required ventilation to outdoors independent of other building exhaust systems, as required by Code
- penthouse mechanical room exhaust, thermostatically controlled, to exhaust room air to outdoors
- Multi-Purpose Room toilet exhaust, to exhaust room air to outdoors
- Battery area air to outdoors, to the extent required by Code
- Child Care Center kitchen, toilet, diapering and janitor closet area exhausts, to exhaust room air to outdoors
- Fitness Center toilet and locker room exhaust, to exhaust room air to outdoors

- Cafeteria's kitchen hood exhaust, to exhaust hood air to the roof and provide negative room pressure relative to adjacent spaces and to provide odor control
- Cafeteria's toilet and serving area exhausts, to exhaust room air to outdoors
- Health Unit toilet, clean and dirty utility storage, bed resting, and janitor closet exhausts, to exhaust room air to outdoors

8.10.10. Service Accessibility. All mechanical equipment shall be provided with provisions for suitable means for lifting and moving all equipment weighing over five hundred (500) pounds. In machine rooms that are more than 12'-0" slab-to-slab, catwalks and ladders shall be provided for access to all serviceable equipment. All mechanical closets shall be vertically stacked where possible. The chillers and their associated pumps shall be located with easy access to the outside, for maintenance and replacement of large pieces of equipment with minimal disruption, and shall be located away from noise-sensitive areas.

8.10.11. Testing Balancing and Commissioning. The Lessor shall complete leak testing prior to installation of finished ceilings. Testing (including any required re-testing), adjusting, and balancing of HVAC equipment and all HVAC water and air systems, prior to Government acceptance of space shall be conducted by a firm that is not affiliated with the mechanical contractor or subcontractor and that is a member of the American Association of Balancing Contractors or equivalent organization. The Lessor shall pretest and certify to the Government in writing that all systems are complete and ready for performance testing. After the Lessor has performed all tests and balances, the Lessor shall provide and certify to the Government a final testing and balancing report identifying all elements tested, instruments used, and final results, and thereafter, the system shall be considered ready for commissioning.

8.11. Electrical. The Lessor shall design, provide and install:

- all lighting, including normal and emergency lighting, in all lobbies, mechanical rooms and other Base Building Spaces
- telecommunication system raceways (e.g., conduits, basket and ladder-type cable tray), capable of supporting the Government telecommunication, data, video, security, life safety, and building automation system requirements to support the general office and Joint Use Spaces
- power distribution from utilities sources to all distributed electrical rooms; including:
 - 480Y/277V and 208Y/120V normal power, with capacity to support the Fit-Out power and lighting loads in Joint Use Spaces and in all Occupiable Space, terminated in branch panel-boards in electrical rooms in the building cores; and
 - emergency power to the electrical rooms with capacity sufficient to satisfy the emergency power requirements of Section 8.11.3.

8.11.1. Primary Electrical Service. The primary electric service to the Facility shall consist of two independent (i.e., originating from different utility company substations) full capacity 34.5 kV services from Virginia Power. The Lessor shall provide, on the load side of such utility service, a dual feeder primary loop-feed network. The primary feeder circuits shall be powered from two separate utility power substations; one from circuit number 327 out of the Jefferson Street substation and the other from circuit number 782 out of the Virginia Hills subdivision. The feed from the Jefferson Street substation is an existing service in the area. Each of the two primary feeders circuits shall follow a distinct route from the substations to

the Facility transformer switch vault and shall be separately encased upon entrance to the Site. Such separate routings shall, at all points, be separated by not less than 20' (up to the service entrance to the Site at Eisenhower Avenue). The primary electrical feeders shall each have the capacity to independently support the entire Facility's power system. Each service conductor shall be sized based on the sum of distribution feeder requirements, system losses, future loads, and system demand and diversity factors. Primary service main equipment shall be rated both for service capacity and for available fault duty. A fault on one primary feeder or at a transformer in the primary network shall trip the associated fused air interrupter. In addition, in order to isolate such a fault, an automatic transfer to the alternate primary feeder shall be accomplished immediately after such a fault is detected.

The main feeders shall run to each Building in concrete-encased duct banks reserved for power wiring only. Feeder conductors shall be insulated for one hundred thirty-three percent (133%) voltage and shall be one hundred percent (100%) shielded. Service feeder conduits shall be non-metallic. The feeders shall terminate at each building at the transformer. The number of transformers shall vary in size and quantity based on the building loads. The transformers shall have cooling fans for added capacity, as required. Each transformer shall be served via a fused, loop-feed, air interrupter switch located in the vault to connect the transformer primary to each 34.5 kV primary feeder. The secondary of each transformer shall serve a service switchboard. Transient voltage suppression system ("TVSS") devices, submetering and power factor correction, if required, shall be provided in the individual service switchboards, as shown on the Design Documents.

An electrical status supervisory and monitoring system shall be provided by Lessor to monitor the status of the primary service switches and the loading of the 34.5 kV feeders and the main switchboards. In addition, transformer temperature alarms and bus under-voltage alarms shall be annunciated at the console. The Lessor shall provide one centralized control system for the Facility to display and control electric supervisory and monitoring functions, with continuous communication capabilities including all necessary devices for metering/monitoring output and status.

The Lessor shall provide power surge protection for the Facility. Each service entrance feeder to each building shall have lightning arrestors. TVSS devices shall be on the secondary side of the transformers at each service switchboard. The minimum rating of the surge suppression equipment shall be 300,000 amps. Each device shall have a response time of less than 1 nanosecond and be type C3. If required to automatically correct lagging primary power factors in order to avoid penalty charges from the utilities service providers, Lessor shall provide power factor correcting capacitors at each building.

Main electrical equipment rooms shall not be located immediately below plumbing drain lines or water lines, or on floors more than one floor below ground level. These rooms shall be physically separated such that an incident (sprinkler leak, fire, etc.) in one room shall not impact the other room(s). All floor-standing electrical equipment shall be installed on 4 inch concrete housekeeping pads. Main service facilities shall be enclosed, and the enclosure shall not be used for other purposes. All electrical equipment shall be located a sufficient distance from communication and data equipment to avoid electro-magnetic interference.

The Lessor shall integrate all buildings with a centralized BAS and EMCS to monitor and control all primary HVAC and electrical systems with the capability to interface and control all secondary HVAC and electrical systems, lighting systems, fire protection and life safety systems, and emergency generators. All major components of the selected BAS/EMCS system for each building shall be from the same manufacturer and the same model to the greatest extent possible, and all major components of the system shall be interchangeable to reduce the number of spare parts required.

8.11.2. Electrical Distribution. The Lessor shall provide 480Y/277V, three-phase, four-wire feeders originating on the load side of the secondary unit substations to each building's secondary switchgear. Lessor shall provide 480V primary, 120Y/208V secondary dry-type transformer(s) for each electric closet. Feeders for distributed loads in the Occupiable Space higher than 800 amps shall be enclosed copper bus ducts. Plug-in bus duct shall have integral ground bus, sized at fifty percent (50%) of the capacity of the phase bus to serve as a grounding conductor. The Lessor shall provide at least twenty-five percent (25%) spare capacity in all busways.

The electrical system for each individual closet shall be sized for adequate capacity without demand factors to serve the watts (non-emergency) per square foot requirements of this Lease plus the extra twenty-five percent (25%) spare capacity in all busways. The busway riser capacity shall be sized for the lighting, receptacle and electric re-heat loads in accordance with the National Electrical Code requirements and demand factor allowances. Buildings B/C/D/E shall each be served by two 2500/2800 kVA transformers.

Building A shall require six (6) 2500/2800 kVA transformers. The requirements for Building A shall be adjusted as appropriate to properly accommodate the Computer Facility.

Computer equipment panelboards serving computer terminals or dedicated work stations shall have an isolated ground bus. Service to the computer panelboard shall be supplied from an isolation transformer. Equipment shall be sized with consideration given to higher harmonic currents in the neutral wire.

The Lessor shall provide an independent ground conductor (IG type signal ground), for computer loads within the Leased Premises, from the service entrance ground to the secondary of the transformer dedicated to computer loads. Proximate to all raised floor areas within Joint Use Spaces (e.g., the Computer Facility, Training Facility and the Public Search Facility), the Lessor shall provide for a ground connection for a high-frequency, signal-reference, copper-matrix grid adequate up to 100 megahertz (which Tenant-side matrix grid shall be provided as Fit-Out).

Secondary central switchgear shall include microprocessor-based protective devices. Secondary central switchgear shall communicate with the supervisory monitoring system. In a case in which the secondary side of the transformers is tied to a two section buss, a tie breaker shall be utilized.

Motor Control Center construction shall be NEMA Class 1, type B with magnetic starters and motor circuit protectors or fuses. Minimum starter size shall be size 1, with three overload relays. Motor controls shall be grouped when more than six starters are required in an

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equipment room. All motors with a rating of 5 hp or greater shall have either a variable frequency drive, solid state starter, or reduced voltage starter in a delta/star configuration. All solid-state starters over 15 hp, and any size starter that is determined to be critical to the operation of the electrical or mechanical service continuity, shall be equipped with a bypass contactor. For starters over 50 hp, the bypass shall include a delta/star motor starter. All solid-state and variable frequency drives shall communicate with the BAS/EMCS.

The Lessor shall provide to the Base Building electrical closets a primary electrical distribution system of switchboards, feeder and branch circuit panel boards with necessary feeders and transformers capable of supporting the Fit-Out secondary (branch) electrical distribution system unit loads shown in the table below, or if applicable, higher loads for specific Base Building Joint Use Requirements described in Section 8.15. The Lessor shall provide two spare circuit breakers in each switchboard and panelboard for each size of circuit breaker. The Lessor shall provide lockable power panelboards for all building electrical loads. The number of spaces for future over-current devices in a panelboard shall not be less than fifteen percent (15%) of the active circuits.

Service Type	Watts/ OSF	Maximum No. of Receptacles/Circuit
Lighting (277 VAC)	1.7	Not Applicable
General Office Service Receptacles and Task Lights (120 VAC)	1.5	8 Duplex
Computer Loads (PCs)(120 VAC)	2.0	3 Duplex; Isolated Ground Type
Printer (120 VAC)	2.0	2 Duplex

As required by Applicable Law, Lessor shall provide shunt trip circuit breakers associated with the elevator systems. Electrical power for fluorescent and high-intensity-discharge-type interior and exterior lighting, motor loads (1/2 HP and larger), elevators and other large single electrical loads shall be at 480Y/277V. All 480Y/277V circuit homeruns to branch panelboards shall not exceed 200' in length. Power for receptacles, incandescent lights, small motors, and specialized equipment shall be at 208Y/120V. All 208Y/120V circuit homeruns shall not exceed 150' in length. The Buildings shall be designed to allow for the capability to install electrical outlets on the interior face of exterior walls.

Each building shall have a main electric room. The secondary side of each transformer shall serve individual service switchboards in the building. The automatic transfer switches for the emergency generators and any fire pumps shall also be connected to the secondary side of a transformer. The emergency system is described further in Section 8.11.3.

Buildings B/C/D/E shall have a main electric room in each building with two service switchboards and the emergency switchboard. Additional switchboard(s) shall be provided by Lessor in Building E as necessary to support the temporary Computer Facility. Building A shall have main electric rooms with five (5) service switchboards and the emergency switchboard. The service switchboards for each building shall serve the lighting and receptacle risers, as well as smaller local mechanical loads. The major mechanical loads shall be served from the MCC connected to individual service switchboards. Each vertically

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stacked electric closet shall be served by a vertical bus duct riser. Buildings B/C/D/E shall each have two (2) risers, one (1) for each of the vertically stacked electric closets per floor. Each riser shall be at 480Y/277V, with the ground bus capacity sized at least fifty percent (50%) of the phase bus. The busway shall be rated for 1200 or 1600 amperes, per riser shown on the Design Documents.

In Building A, there shall be four (4) busway risers in each building wing for power and lighting. Each wing shall have one (1) 1600 ampere, two (2) 1200 ampere and one (1) 1000 ampere busway. These busways shall serve the closets in that wing. Each wing of Building A shall have a 1200 ampere mechanical equipment riser.

Each electric closet shall contain room for at least three (3) 42-pole panelboards: one (1) panelboard for 480Y/277V lighting loads and two (2) panelboards for 208Y/120V loads, plus spare room for one (1) additional panelboard. Some electric rooms shall also contain an emergency panelboard. All panelboards shall have room for at least fifteen percent (15%) future circuit breakers. The 208Y/120V panelboards shall have a neutral bus rated for harmonic loads. All 208Y/120V panelboards serving computer loads (computer terminals and workstations) shall also contain an isolated ground bus.

Within each Building, the isolated ground bus shall be connected to the ground of the derived system (the center point on the Y of the secondary of the transformer) through an insulated, independent ground wire. This insulated ground wire shall be connected to the main service entrance ground through a ground riser, thus producing a direct path to ground for sensitive loads. This shall also create a common ground reference for all of the 120V panelboards utilizing an isolated ground bus. Oversized neutrals shall be utilized from the panelboard to the transformer. Neutrals on branch circuits for computer use loads, such as pc's and printers shall utilize dedicated neutral conductors.

8.11.3. Emergency Power. The Lessor shall provide an emergency power system ("EPS") to satisfy all life safety requirements of the Facility. Each Building shall be equipped with a stand-by engine generator with a fuel capacity capable of providing power for a duration of seventy-two (72) hours at twenty-five percent (25%) of the engine's full rated fuel consumption for Buildings B/C/D/E and sixty percent (60%) of the engine's full rated fuel consumption for Building A. Each engine shall provide full rated output from a cold start condition in a maximum time of ten (10) seconds in compliance with the requirements of NFPA 70, Section 700-12 and NFPA 101, Section 5-9.1.2. The Lessor shall provide a generator malfunction alarm system connected to the BAS for each building as well as to the Security Command Center. The Lessor shall provide automatic transfer switches ("ATSs") as required for each generator to protect motor loads from damage caused by out-of-phase transfer. ATS units shall include by-pass isolation switches.

Each emergency generator shall have a panelboard which shall distribute the generator power as necessary. The ATS shall receive its primary power from the secondary of a transformer and the emergency power from the generator. The load side of the ATS shall serve an emergency switchboard located in the main electric room. Any fire pumps shall be connected to this panelboard, and shall have a control panel with an ATS for switching between the normal utility power and the emergency source of power.

The emergency switchboard shall serve emergency loads, such as the emergency MCC, emergency 480Y/277V distribution panelboards and an emergency 480Y-208Y/120V distribution transformer. The emergency transformer shall serve emergency 208Y/120V panelboards. Emergency 208Y/120V panelboard(s) shall be distributed throughout the building on every floor to serve the loads on that floor. The loads served by these panelboards shall be primarily the EPS duplex receptacles in each communication room (eight (8) 120V/20 amp outlets (four (4) in the LAN Room and four (4) in the Telephone Room)), the electrical rooms, the main electric room, the main mechanical rooms, the main communication vaults (two (2) 120V/20 amp outlets), the switch room (twenty-eight (28) 120V/20 amp outlets) and the MDF and MDF/UPS rooms (fourteen (14) 120V/20 amp outlets). These receptacles shall be colored red and contain integral neon lamps. The panelboards shall all be equipped with isolated ground bus bars, and all 120V receptacles located in communication rooms shall be an isolated ground type receptacle. The EPS shall be sized for, and shall include the primary distribution to, panelboards supporting lighting at the full levels required by this Lease in the following space: the Computer Facility, main communication vaults, switch room, MDF rooms and communications rooms. This emergency lighting shall be powered through EPS 480Y/277V panelboards connected to the emergency generator.

Primary distribution for the HVAC loads shall include wiring, switchgear and controls as required to connect the generators to the appropriate panelboards in each building. Primary distribution for the conditioned power shall include wiring, switchgear and controls as required to connect the generators to the power conditioning equipment and to supply conditioned power from the conditioning equipment to the panelboards in each building related to the main communication vaults, switch room, MDF rooms and communications rooms. Primary distribution from stand-by generators is in addition to the primary power distribution as required to support normal building loads.

In addition to the life safety system described above and in Section 7.10, the Lessor shall provide an information technology emergency power system ("ITEPS") with primary power distribution and stand-by capacity to support information technology equipment in the Computer Facility, main communication vaults, switch room, MDF rooms and communications rooms of all Buildings.

For the ITEPS in Building A, the Lessor shall provide two (2) TB 1670 Piller® power conditioning/UPS systems, located on the concourse level to supply power to the information technology equipment, plus a dedicated engine generator, located in the penthouse, to provide stand-by power for the 24-hour HVAC loads. Both systems (Piller® and dedicated engine generator) shall support loads in the Computer Facility, main communication vault, switch room, MDF rooms, and communication rooms of Building A. The fuel capacity for the engines fueling such systems shall provide power for a duration of seventy-two (72) hours at sixty percent (60%) of the engines' full rated fuel consumption. The Lessor shall provide additional space and infrastructure on the concourse level to allow for a third unit to be installed at a later date to support future loads. Spare capacity and circuit breakers shall be provided as part of the initial package to allow for the easy implementation of the third unit, should it become necessary. The physical layout of the power conditioning/UPS equipment shall be such that any component of the system can be removed and replaced without requiring demolition to the building. The use of removable wall panels shall be incorporated into the

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design. Lifting eyes and/or rails shall be provided to allow for the rapid repair of the power conditioning/ UPS modules.

Each Piller® system shall consist of an on-line, dual output, synchronous rotary continuous power system ("CPS") module, external maintenance bypass, remote annunciation panel, and all controls and accessories necessary for the equipment to function properly as a system. The CPS module shall include a control module with an integral dynamic energy storage module, a rotary power conditioner connected to a diesel engine through an overrunning clutch and engine mounted coupling, and an engine control panel. The CPS module shall provide at least 10 seconds ride through time to start the engine at rated load. Chemical batteries shall not be used to provide ride through time to start the engine, however, chemical batteries may be used to power the engine starters. The CPS modules shall be rated 1670kVA/1336 kW critical bus output and 1300 kVA /1040 kW essential bus output. The critical bus shall be a no-break system capable of supporting its connected load without interruption. The essential bus shall be allowed to have an open transition transfer between sources, however, the break in power delivery shall not exceed 20 seconds. The critical power distribution system shall be a single module design, with separate inputs for the critical bus and the essential bus. A paralleled configuration to meet the load requirements stated above is expressly prohibited. The essential bus shall provide redundancy to power the 24-hour HVAC loads. The Lessor shall provide distribution panels for both the critical and essential bus outputs from the power conditioning/UPS modules.

For the ITEPS in Buildings B/C/D/E, the Lessor shall provide power conditioning/UPS equipment to support all communications vaults, switch room, MDF rooms and communications rooms. The 24-hour HVAC for said rooms shall receive stand-by power from the Building EPS. The UPS equipment shall be as follows: Single-module, on-line static UPS equipment with two (2) strings of fifteen (15) minute chemical batteries, type VRLA, in matching enclosed cabinets. Each battery system shall have a dedicated D.C. switch to isolate the battery system from the bus for maintenance/repairs while the other battery system is available to support the connected load. The rating of the UPS equipment shall be a minimum of 225 kVA for Buildings B, C and D. Building E shall be provided with a UPS system of a minimum capacity of 300 kVA. All static UPS systems shall have external maintenance bypass panelboards and fully-rated static switches. The use of momentary duty static switches is not acceptable. The power source for the UPS systems shall be the utility source, with the EPS generator for each building serving as the back-up power source. Panelboards for these areas shall have hinged covers and inner protective barriers to allow for safe and easy access.

8.11.4. Electrical Rooms. Electrical rooms shall be provided by Lessor and distributed throughout the Buildings. Electrical rooms shall be located such that no wiring runs in the Leased space exceed the homerun lengths specified in Section 8.11.2, (ii) each electrical room shall stack vertically in the building, (iii) the Lessor shall physically separate all electrical rooms from communication rooms, and (iv) electrical rooms shall be accessible from public corridors or lobbies, and not via toilet rooms, storage rooms, janitor closets, or stairways. The electrical rooms are dedicated to contain power distribution equipment, fire alarm junction boxes and security systems. Electrical rooms shall provide spare space to house an additional panel and transformer equivalent to largest equipment configuration in the room. The Lessor shall provide an exhaust system for each electrical room.

In Buildings B/C/D/E, the location and the layout of the core area require two (2) electric rooms per floor. In Building A, the location and the layout of the core area requires four (4) electric rooms per floor. Electrical rooms shall be stacked vertically starting from the concourse level and continuing up through Level 10. The electric rooms shall be approximately 14' by 8' in size, and shall be a similar size for every floor. Additional electrical room(s) or electrical room space shall be provided by Lessor in Building A to support the Computer Facility.

The electrical rooms shall all be accessible from the corridor. All the electric rooms shall have doors which swing outward, if allowed by Applicable Law.

8.11.5. Lighting. The lighting system for Base Building Spaces shall provide and maintain at least the following lighting levels:

Space Type	Foot Candles
Public Corridors/Stairways	20
Emergency Lighting for Corridors/Stairways/Exit Passageways	1
Mechanical/Electric Rooms	20
Indoor Parking	10
Outdoor Parking	3
Exterior Building Entrances	5
Pedestrian Passageways and Congregation Areas	5
Main Communication Vaults, Switch Rooms, MDF Rooms, Communication Rooms	50
Emergency Lighting for Main Communication Vaults, Switch Rooms, MDF Rooms, Communication Rooms	12

The Base Building primary electrical system shall be sufficient to support a Fit-Out lighting level load of at least fifty (50) foot-candles in all portions of the Leased Premises (with lighting levels measured at worksurface locations 30" above the finished floor), unless a different lighting load is specified in a Joint Use Space requirement, and provided, however, in all general office spaces, there shall be sufficient Base Building primary electrical capacity to support additional Fit-Out task-based lighting to achieve up to one hundred (100) foot-candles at the work level.

For purposes of sizing the Base Building electrical system, the standard lighting in the space to be covered by the Fit-Out Allowance shall be provided by a high efficiency, electronic ballast, 2' x 2' fluorescent lay-in fixture with a deep cell parabolic louver. Exit signs shall be clear side-lite type fixture with unidirectional or bi-directional arrows, as required. Egress lighting shall include back-up power.

The lighting for Joint Use Spaces, such as the Cafeteria, Lobby and Fitness Center, shall be appropriate for the use of the area and selected to compliment the surrounding architecture. Lighting in areas such as mechanical and electrical rooms shall be accomplished through

industrial fluorescent fixtures to provide a hazard free working area with sufficient light to facilitate work on equipment.

All Base Building Spaces shall utilize occupancy sensors to decrease energy consumption. Outdoor areas such as the outdoor Cafeteria seating area, landscape lighting and site lighting shall utilize photo cells for control of the lights.

8.11.6. Lighting Controls. The Lessor shall provide a programmable lighting control system ("PLCS") with the capability of supporting all Occupiable Space. The Lessor shall provide local switching interface capabilities and connections to the PLCS for all Base Building Spaces, and shall provide occupancy sensors for all Base Building Spaces other than lobbies and entry-level public corridors. The PLCS shall be interconnected to the BAS and EMCS.

8.12. Telecommunications, Data and Video.

8.12.1. Wire Distribution Design Criteria. The main communication vault, MDF room, and communication room design criteria shall comply with the then-current Commercial Building Standard for Telecommunications Pathways (EIA/TIA 569).

Lessor shall provide a telecommunications wireway between buildings consisting of twenty-four (24) 4" diameter PVC conduits, the underground portion of which is concrete encased duct banks routed through a manhole system. Each building will have a manhole from which eight (8) 4" conduits will enter the building and be routed to the MDF room. The manholes shall be installed as required to ensure that there are no more than two 90-degree bends between manholes, and the maximum distance between manholes shall be 500 feet. The entry duct bank(s) will be installed below the structural slab in Building A. In Buildings B, C, D and E the duct bank will transition to eight (8) 4" electrical mechanical tubing (EMT) conduits to be routed in the ceiling of the concourse level from the building entry point to the MDF room. The Lessor shall conceal the EMT conduits and pull boxes above a ceiling in both the concourse and utility tunnel at a minimum height throughout of 9'-0" above finished floor which cannot be reduced by bulkheads at any point. At Buildings A and E, the Lessor shall provide a USPTO manhole separate from the Verizon service manhole, an underground duct bank with eight (8) 4" diameter concrete encased PVC conduits connecting the manholes, and a combination of same sized underground duct bank and overhead EMT conduits routed from the USPTO manholes to the main communication vault located on the concourse level in the east wing of Building A and in Building E, respectively.

Lessor shall provide a voice, data and telephone (communications) wire distribution system which shall be composed of conduits and cable tray horizontally from the MDF room of each building to the communication rooms on the same level and then vertically through the communication rooms to the top level. The distribution system shall be of adequate capacity to support the Government telecommunications requirements as well as data, video, security, life safety and building automation systems for the general office and Joint Use Spaces. From the main communication vaults and switch room, the communications cables shall be distributed via a system of conduits, sleeves and cable trays. To the extent possible, the communications rooms shall be stacked vertically in the Buildings, so the communications cable shall rise through the building by conduit sleeves passing through the floor. Where

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communication rooms do not stack vertically (i.e., not sufficiently overlapped to allow vertical sleeves between closets), Lessor shall provide eight (8) 4" conduits between the rooms on adjacent floors for communications cabling. Lessor shall provide two (2) 4" conduits between the communication rooms on every floor to allow interconnection of the communication rooms on the floor.

The backbone telecommunications wire distribution system shall also include a dedicated grounding system which shall connect to the electrical system ground only at the main service ground. The Lessor shall provide grounding consisting of telecommunications grounding busbars in communication rooms, main communication vaults, switch room and MDF rooms, telecommunications bonding backbone riser through the vertical risers and interconnecting bonding conductors at a minimum of every third floor to interconnect grounding busbars in different rooms on the same floor to meet EIA/TIA grounding standards and to provide a highly reliably ground point for the entire telecommunications system.

8.12.2. Main Communication Vaults and Switch Room. The Lessor shall provide two (2) 96 square foot main communication vaults for the entire Facility, one on the concourse level in the east wing of Building A and one on the concourse level of Building E (with the space for such main communication vaults to be incorporated into their respective MDF room) to support the Government incoming utility service for telecommunications. The Lessor shall provide a minimum of eight (8) 4" diameter concrete encased non-corrosive conduits with no more than two (2) 90° bends for the utility service to each communication vault. All conduit shall be located so as to minimize potential exposure to water and electromagnetic interference. Each vault shall be constructed of concrete masonry units with a structural floor live loading capacity of 150 lbs./SF. The Lessor shall recess the slab in the switch room to accommodate an 18" raised access floor and place ten (10) 4" diameter non-corrosive steel sleeves in the concrete masonry unit wall below the access floor (such access floor to be funded through the Fit-Out Allowance). The Lessor shall provide ten (10) 4" diameter conduits with no more than two 90° bends from the main communication vault on the concourse of the east wing of Building A to the switch room. All conduits shall be located so as to minimize potential exposure to water and electromagnetic interference.

Immediately adjacent to the MDF room and the Computer Facility on Level 3 of the east wing of Building A, the Lessor shall provide one (1) 1,500 square foot switch room for the entire Facility as shown on the Building Floor Plans. The switch room partitions shall be constructed with concrete masonry units (including sleeves of a type and number to be reasonably determined by the Government) with a 3/4" thick, fire-rated plywood finish on all interior walls. The Lessor shall provide vapor barriers on all external base building walls and slabs which define the envelope of the switch room. The switch room shall have a structural floor live loading capacity of 150 lbs./SF.

The Lessor shall provide in each main communication vault and switch room, primary electrical service to support 50 VA per square foot. Such electrical service shall be fed by the critical bus output of the power conditioning/UPS equipment as described in Section 8.11.3. In each main communication vault and switch room, the Lessor shall provide a separately zoned sprinkler system, with dedicated flow and tamper switches and alarms.

8.12.3. Main Distribution Frame Room. The Lessor shall provide one (1) 600 square foot main distribution frame ("MDF") room on the concourse level in each Building (except that Building A shall have two (2) such MDF rooms). In Buildings B, C, D, and E, the Lessor shall provide an additional 300 square feet to the MDF room (a total of 900 square feet) to house the Lessor provided ITEPS power conditioning/UPS equipment. In Building E, Lessor shall provide an additional temporary 1,000 square feet to the MDF room for the interim data center. Lessor shall provide eight (8) 4" diameter non-corrosive conduits for connection between the MDF room in each Building and the 24 conduit campus wireway, with no more than two 90 degree bends, except for the MDF room in the west wing of Building A where ten (10) 4" conduits are required for the connection. The Lessor shall provide twelve (12) 4" diameter non-corrosive conduits below the floor slab to connect the MDF room in the west wing and the MDF room in the east wing of Building A. In each MDF, the Lessor shall provide primary electrical service to support 50 VA per square foot. Such electrical service shall be fed by the critical bus output of the power conditioning/UPS equipment as described in Section 8.11.3. In each MDF, the Lessor shall provide a separately zoned sprinkler system, with dedicated flow and tamper switches and alarms. The MDF room partitions shall be constructed with concrete masonry units with a 3/4" thick, fire-rated plywood finish on all interior walls. The Lessor shall provide vapor barriers on all external base building walls and slabs which define the envelope of each MDF room. The Lessor shall provide a structural floor live loading capacity of 150 lbs./SF.

The Lessor shall locate one additional MDF room adjacent (with all the attributes of an MDF room described in the preceding paragraph) to the Computer Facility in Building A to ensure cross connection for the inter and intra-building data distribution network. In the MDF room which is adjacent to the Computer Facility, the Lessor shall recess the slab to accommodate 18" raised access floor and place eight (8) 4" diameter non-corrosive steel sleeves in the concrete masonry unit wall below the access floor (such access floor to be funded through the Fit-Out Allowance).

8.12.4. Communication Rooms. The Lessor shall provide communication rooms for a vertical and horizontal wire distribution system capable of supporting the Government's technology for a telecommunications, data and video network as shown on the Building Floor Plans. These are the same communication rooms referenced in Section 8.12.1 above. Each communication room shall be at least 200 square feet in size and (i) shall include a local area network computer room (the "LAN Room") and an adjacent telephone room (the "Telephone Room"), each of the LAN Rooms and Telephone Rooms being approximately 100 square feet in size, (ii) shall be located at least two (2) on each floor containing Occupiable Space, (iii) shall be stacked vertically in each building or, in the event that rooms are fully offset between floors, the Lessor shall provide connection between floors by eight (8) 4" diameter conduits (four (4) connecting the offset LAN Rooms and four (4) connecting the offset Telephone Rooms) (iv) the Lessor shall provide eight (8) 4" diameter non-corrosive steel sleeves for vertical risers (four (4) in the LAN Room and four (4) in the Telephone Room) and eight (8) 4" diameter non-corrosive steel sleeves (four (4) in the LAN Room and four (4) in the Telephone Room) to the Lessor provided horizontal cable distribution apparatus on that floor, (v) if on a floor with a depressed slab, shall have a depressed slab of the same depth as the adjoining Occupiable Space, (vi) the Lessor shall construct with concrete masonry units with a 3/4" thick, fire-rated plywood finish on all interior walls, and (vii) the Lessor shall provide two (2) 4" diameter conduits for inter-connection with other communication rooms on the same

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floor. The Lessor shall provide vapor barriers on all external base building walls and slabs which define the envelope of each communications room. While each Telephone Room shall be part of the Base Building Spaces and shall not be part of the Occupiable Space, each LAN Room shall be Occupiable Space.

If allowed by Applicable Law, communication room doors shall swing outward, shall have one hundred eighty (180) degree hinges and shall have locksets. The Government shall retain sole control of all keys to communication rooms and shall have sole control over the same. The Government shall provide access to the Lessor in order for the Lessor to perform appropriate repairs and maintenance. In each communication room, the Lessor shall provide a separately zoned sprinkler system, with dedicated flow and tamper switches and alarms.

Lessor shall provide on the concourse level eight (8) 4" diameter conduits (4 to the Telephone Room and 4 to the LAN Room) from the MDF room to each communication room that initiates a stacked sequence of communication rooms.

8.12.5. Wire Distribution System. The Lessor shall provide either (i) in the floor, if there is a raised access floor system, or (ii) otherwise, in the hung ceiling plenum, a ladder-type cable raceway or other equivalent system as approved by the Government. The wire distribution system shall be designed to meet present and future user demands and must be planned for easy access, modification and expandability. The cable tray shall be sized based on the EIA/TIA standards, using approximately one (1) square inch of cross-sectional area of the tray per 100 square feet of usable floor space, assuming three (3) devices per workstation and one (1) workstation per 100 square feet, and shall have adequate capacity to support the data, video, security, paging, life safety and building automation system requirements of the Facility. The Lessor shall provide cable basket which shall extend from each communication room into the plenum space above the corridor that is adjacent and parallel to the core for the full length of the core. The Lessor shall provide in each communication room 16'-0"L x 18"W x 4"D cable ladder mounted at 8'-0" above finished floor. The Lessor shall provide in each main communication vault, switch room and MDF room a continuous loop of 18"W x 4"D cable ladder mounted at 9'-6" above finished floor and approximately 3' from the inside face of the wall to the nearest edge of the ladder.

The wire distribution system shall safely conceal all wiring, and be parallel, with physical separation for voice and data cables grouped side by side. Except as located within a space related to wire distribution (e.g., main communication vaults and switch room, MDF rooms and communication rooms), the wire distribution system shall consist of solid/sealed conduit and locked pull boxes wherever it passes through a Base Building Space (e.g., lobbies, public corridors, restrooms, mechanical rooms and electrical rooms.)

8.12.6. Cabling. While wire distribution systems and pathways are to be provided by Lessor as described in the preceding paragraphs of this Section 8.12, all cabling (telephone, data, video, etc.) and all associated equipment, except where such cabling and equipment are part of the Base Building, shall be part of the Fit-Out.

8.13. Security Provisions.

8.13.1. Requirements. The Lessor shall provide a level of security which deters unauthorized entry to all Buildings during and after the Government's normal hours of operation, deters loitering, and deters disruptive acts in and around the Facility during the Government's normal hours of operation. The security system shall be flexible and have expandable capabilities, and shall not be labor intensive nor require extensive, highly-technical training. The security system shall be capable of integrating access controls, CCTV, alarm reporting, video imaging and parking controllers. The Lessor provided security shall include a 24-hour staffed, secured, on-site, central command center dedicated to the Facility. The security command center shall not be considered in the occupiable square feet calculations. The security provided by the Lessor shall comply with the requirements of Section 6.6.2.

The Lessor shall provide security which shall include active and passive monitoring of all perimeter areas, vehicle access points, parking facilities, pedestrian concourse, passageways and congregation areas, main entrances, loading docks, emergency exit egress and stairways, and shall be expandable to monitor all Joint Use Spaces. The Lessor shall provide electronic card access from the exterior of each building which, prior to installation, shall be coordinated with the Fit-Out installation of electronic card access and other security measures in the interior of each such building. Any keys to Base Building locksets shall be of a type which prevents unauthorized copying.

The proprietary protection system ("PPS") shall be a computerized security management system configured to monitor, control, and, where applicable, report the status of principal subsystems. The proprietary protection console ("PPC") shall be modular and consist of multiple, upright racks joined to form a single unit with ends and back enclosed with panels.

Protective devices shall be provided on all exterior doors. Door contacts on exterior doors and access to inter-building concourse level connections shall be surface-mounted, high security, balanced magnetic-read type contacts. If concealed wiring is not installed, wiring shall be installed in wiremold. Wiremold shall be painted to match adjacent surfaces. Exterior doors shall be protected with weatherproof, balanced magnetic-read type door contacts, if exposed to the elements. In addition, heavy-duty, surface mounted, balanced magnetic-read type magnetic door contacts shall be provided to each group of roll-up doors at loading docks.

Local duress alarms shall be provided at key public contact areas and in garages. Duress alarms shall report to the security command center.

Closed circuit television ("CCTV") shall be provided by Lessor. Monitoring shall be at entrances, monitored exits, vehicular entrances into parking garages, parking garage elevator cores, and loading docks. The CCTV systems shall be primarily for alarm assessment and access control automation purposes. All CCTV cameras shall be on real-time and time-lapsed video recorders, for deterrence as well as to aid post-incident investigations. Most exterior areas, especially vehicle routes close to the Facility, shall be video recorded. All necessary system wiring and devices required for a complete, operating CCTV system for shell building shall be provided. The CCTV system shall have the capability to accommodate up to fifty (50) cameras and fifteen (15) monitors for future expansions. The CCTV system shall interface with the alarm and intrusion detection system and be capable of recording alarm situations on

a time-lapse VCR. All lighting required for CCTV camera locations provided as part of the Base Building shall be provided by the Lessor. Each camera shall be designed for use at low light levels. The camera shall have an auto iris lens and need a minimum scene illumination of .5 foot candles of light to function properly. Cameras for parking lot and perimeter surveillance shall have a motor-driven pan and tilt unit capable of three hundred sixty (360) degree movement in horizontal plane and be equipped with zoom lenses. All exterior cameras shall be equipped with Pan/Tilt/Zoom features. Loading dock cameras shall be equipped with an intercom so that remote door release can be provided. Exterior cameras shall be mounted on the building or pole mounted in dome enclosures so that the presence of a camera is undetectable. The camera and its accessories shall have an environmental housing and heater, sun and rain shield. A multiple control unit designed to control each camera shall be installed in the security command center console and be used to control the tilt, pan and zoom of all cameras. The PPC monitors shall be 20" color with capability to have multiple images split or quartered.

All exterior doors and access to inter-connecting passageways on the concourse level shall be capable of being key-locked during evenings, weekends and at other times the Facility is unoccupied. A very high security keying system shall be used. Duplicating the keys on a conventional machine shall be made difficult. A formal key control program or system shall be maintained. Critical entrances shall have electronic locking such as electromagnetic locks for fire egress exits. Any cover, panel, or mounting means of main panels shall be electrically supervised if it gives access to any relays, terminals, controls, or related components that might be subject to tampering, so that opening or removal shall result in an alarm or trouble signal.

The PPS shall be capable of producing color graphics that create single line schematic diagrams of managed systems with status, control and back-up text display for reviewing program steps. The PPS shall be designed to accommodate an additional five hundred (500) points for future expansion. The PPS shall be able to integrate signals from external sources into its monitoring function. Other sources shall include metal detectors, electronic surveillance systems, perimeter protection system, and other industrial supervision inputs. The PPS shall be a Grade A system in accordance with UL 1076. Different levels of computer access shall be provided, each with a unique software password.

The campus shall contain an operational control center ("OCC"), fire command center ("FCC"), security command center ("SCC") and a back-up control center ("BCC"). The OCC, FCC, and SCC shall be co-located provided the fire marshal does not object. BCC shall be provided in a different location. If permitted by Code, an elevator recall button shall be provided on the FCC to recall elevators to an alternate floor. This shall keep people from congregating on the first floor (lobby) in case of a fire or bomb threat.

The PPS shall be a multiplex wired system. The computer system shall have a CPU with automated tape back-up and shall be powered through a UPS system. Dedicated wiring shall be used for the system. The multiplex system shall provide complete supervision of each protective circuit. There shall be no loss or confusion of signals due to temporary outage of the connecting link between the console (PPC) and the protective circuits. The multiplex system order of priority signals shall be:

- fire alarm, smoke detectors, etc., and all industrial supervision where a risk of injury to persons, damage, or destruction of property may be involved
- holdup or duress alarm
- intrusion detection, including entry control system alarms
- fire alarm supervision
- burglar alarm supervision
- industrial supervision where a risk of injury to persons or damage or destruction of property shall not be involved

The PPC shall be designed for the installation of the following principal components:

- computer with back-up control processing unit (CPU)
- CRT with an associated keyboard
- teleprinter/printer
- color graphics display terminal
- closed circuit television (CCTV) system components
- communication system components

The color graphic display terminal shall be provided and installed by Lessor. This terminal shall, upon an alarm condition, display an associated color graphic floor plan. The color graphic display terminal shall have at least a 15" diagonal CRT with a high resolution RGB color monitor display. The terminal shall also have its own dedicated keyboard. It shall be designed to allow the system programmer to configure floor plans via the keyboard and a color graphic programming language. Configured floor plans shall be associated with specific alarm events.

The card readers shall be designed for the installation of the following principal components:

- all card readers shall be swipe-type or proximity type
- all card readers shall be micro-processor controlled with programmable functions
- all readers shall be encased in a durable, tamper resistant housing and designed for pedestal or wall mounting on the exterior of rooms to be accessed
- all readers shall have a normally open dry-contact

8.13.2. Additional Requirements. In any event, the Lessor's security measures shall ensure that each Building meets all GSA Security Criteria to produce a Protection Level of B for Crime and B for Terrorism, except as noted otherwise for specific rooms within such Buildings in the table below. The following sections of the GSA Security Criteria are modified and/or supplemented as noted:

3.A.8 Surface Finishes and Signage in Parking Facilities - Walls which are not painted shall be constructed of light colored materials to the extent practical.

3.B.5 Loading Docks and Shipping and Receiving Areas - Where hardening is employed in lieu of a 50' standoff, hardening shall be designed to withstand a blast equivalent to approximately ten (10) pounds of TNT.

3.B.8 Stairwells - As shown on the Building Floor Plans.

3.D.2 Child Care Center, Location Within the Facility - Filled, reinforced masonry walls or equivalent are considered sufficient compensating blast measures, where child care facilities are within 100' of loading docks, unscreened parking, etc.

4.B.1 Progressive Collapse - For the purposes of designing for progressive collapse, the Government Facility may be assumed to have no defined threat. Therefore, the Facility shall be designed for the loss of one primary vertical load bearing member at the building perimeter for the first two floors above grade without progressive collapse. The criteria for explosions in uncontrolled public space also apply. There are no uncontrolled public spaces in the Leased Premises.

4.B.5 Exterior Glazing - This criteria shall only apply to windows in public lobbies and the Child Care Center.

4.B.7 Interior Glazing - This criteria shall only apply to interior glazing which is accessible before a security check point.

6.A Service and Distribution - For the purposes of the Government Facility, the principle requirement related to emergency power is that the service be protected from public access throughout the system, i.e., all emergency power service is contained in secured ductbank/conduit where it runs through exterior/public space, generators and fuel supplies are restricted from public access.

8.D.2 Intrusion Detection - Glass-break sensors are not required if CCTV monitoring is provided for all of the ground floor perimeter of the Buildings.

The following table sets forth the GSA security protection level ascribed to each of the designated areas of consideration within the Facility:

ROOMS/SPACES OF CONSIDERATION	GSA PROTECTION LEVEL	
	CRIME	TERRORISM
Multi-Purpose Room	A	A
Computer Facility ⁽¹⁾	C	D
Fitness Center	A	A
Cafeteria	B	A
Health Unit	A	A
Building Conference Centers	A	A
License & Review	C	C
Main Communications Vaults ⁽¹⁾	C	D
Main Distribution Frame Rooms ⁽¹⁾	C	D
Switch Rooms ⁽¹⁾	C	D
Electrical/Telephone/LAN Rooms ⁽²⁾	B	C
Emergency Power ⁽²⁾	A	C

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NOTES: (1) Spaces noted shall comply with Security Criteria 2.E for Parking (to the extent commercially practicable) and, if located on a perimeter wall, shall conform with Security Criteria 4.B.4 and 4.B.5 for Exterior Cladding and Exterior Glazing. Emergency power which serves the spaces noted shall be installed such that it is inaccessible to the public throughout the delivery path. The emergency power system shall be exercised periodically and the procedures for same shall be contained in the Lessor's operations and maintenance plan. None of the spaces noted may be located immediately under spaces with significant water usage (e.g., kitchens, bathrooms, showers, exterior space).

(2) None of the spaces noted may be located immediately under spaces with significant water usage (e.g., kitchens, bathrooms, showers, exterior space).

8.14. Signage and Graphics Program. In addition to the exterior signage described in Section 8.4.9, the Lessor shall provide a secondary signage and graphics system, integrated with the architectural design details and finishes of the Facility, to orient and guide the public from the Facility access points to and from each Joint Use Space, major building functions, and each elevator lobby. The secondary signage system shall include identification for specific areas within the public corridors and building core elements (e.g., toilet rooms, mechanical rooms, and electrical rooms). The Lessor shall provide signage and labeling for all Base Building mechanical, Base Building instrumentation and Base Building control systems. The Lessor shall coordinate with the Government during the design and construction of the Fit-Out over the location, style, details and finishes of all interior signage and labeling. All public signage shall comply in all respects to the ADA and UFAS.

The Lessor shall provide an interactive display directory in the ground floor lobby of each of the Buildings. Such directories shall provide clear and easily understood directions and information. A signage and graphics design program coordinated with the lobby directories shall be developed by the Lessor, in conjunction with the Government, for the Occupied Spaces that will be easily adaptable to changing names of functions and occupants. The signage and graphic design program shall address main lobby signage, main lobby directory, which shall be an interactive display, base building signs, fire department and emergency signs and notices as well as identification signs for room functions and/or staff names. All signage in the Occupiable Space shall be Fit-Out.

8.15. Base Building Joint Use Requirements. The following areas are intended for the use of all Government employees and, in some instances, members of the general public. Therefore, these spaces have been designated and will be referred to in this Lease as "Joint Use Space(s)":

- Multi-Purpose Room
- Computer Facility
- Child Care Center
- Fitness Center
- Cafeteria
- Health Unit
- Building Conference Centers
- Storage Room
- Public Search Facility

- Receiving Areas
- Training Facility

This section and the following Sections 8.15.1 through 8.15.12 of this Lease identify the space-specific Base Building Joint Use Requirements for each of these twelve (12) Joint Use Spaces. These space-specific Base Building Joint Use Requirements supplement and only to the extent inconsistent, supersede those generic Base Building Standard Requirements set forth at Sections 8.1 through 8.12 above.

While all of the Facility shall comply with the ADA and UFAS, the Lessor should note the many specific ADA and UFAS requirements applicable to certain Joint Use Spaces. The Lessor should consider hiring a specialty consultant to confirm its conformance with all ADA and UFAS requirements for such spaces, as well as the remainder of the Facility.

The Base Building requirements for the Joint Use Spaces include (i) the Base Building Standard Requirements (contained in the foregoing Sections 8.1 through 8.12), to the extent not superseded by the space-specific Base Building Joint Use Requirements set forth herein, and (ii) as to each of the Joint Use Spaces, the following:

- mechanical rooms and other support utility spaces that meet all Base Building Standard Requirements set forth above in this Article VIII, and which are in each case, of sufficient capacity and located properly so as to support the functions of each Joint Use Space; no such mechanical or support space shall be included in the calculation of the occupiable square footage required for each Joint Use Space
- all utilities, mechanical and fire protection systems to the perimeter of each Joint Use Space, including interface capabilities to the primary building systems, as applicable
- servicing, isolation and bypass devices for all major systems, to the extent described below in Sections 8.15.1 through 8.15.12 for each Joint Use Space
- where separate exhaust systems are required in this Section 8.15 for any Joint Use Space, the Lessor shall provide riser ductwork, with the balance of such system being constructed from the Fit-Out Allowance; for exhaust system riser sizing information, the Lessor shall refer to the POR attached as revised Schedule 5.2.1
- where separate plumbing systems are required in this Section 8.15 for any Joint Use Space, the Lessor shall provide riser piping, with the balance of such system being constructed from the Fit-Out Allowance; for plumbing riser sizing information, the Lessor shall refer to the POR attached as revised Schedule 5.2.1

Joint Use Space Locations. The Joint Use Spaces shall be located in:

Building A

Cafeteria	Concourse (west)
Training Facility	Level 2 (west)
Computer Facility	Level 3 (east and west)
Multi-Purpose Room	Concourse (Atrium)
Public Search Facility	Level 1 & 2 (east)

Building B

Fitness Center	Level 1
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Building Conference Center Level 1

Building C

Child Care Center Level 1
Health Unit Level 1
Mail Room Concourse
Building Conference Center Level 1

Building D

Building Conference Center Level 1
Storage Room Concourse

Building E

Building Conference Center Level 1

All Buildings

Receiving Areas Level 1 or Concourse

8.15.1. Multi-Purpose Room.

Function: Government assembly and public functions.

Space Requirement: Approximately 10,000 square feet

Location/Adjacency: Space for the Multi-Purpose Room shall be located on the concourse level of Building A Atrium.

Requirements: The Lessor shall provide the following:

(a) **Architectural:** Within shell space, a minimum of 6,600 square feet of level-floor, column-free space to accommodate the seating area and to provide a clear line of sight to a stage. Within shell space, capability to accommodate a typical ceiling height of 16'-0", with a minimum of 13'-6" at structural beams and side aisles.

Full width, operable glass wall at south end to allow the room to open to the Atrium.

The Multi-Purpose Room shall be accessible from the loading dock.

Adequate fire egress exiting capacity for assembly type space.

(b) **Mechanical:** An independent HVAC system, necessary servicing and isolation devices and all secondary air distribution, meeting Code for assembly classification and zoned for 24-hour operation.

Riser ductwork that can accommodate an exhaust system to building exterior.

(c) **Electrical:** Additional electrical capacity sufficient for special stage and theatrical lighting and audiovisual infrastructure.

(d) **Plumbing:** Riser piping that can accommodate a plumbing system within this Joint Use Space.

8.15.2. Computer Facility.

Function: Main computer room. The Computer Facility is a 24 hour per day operation and requires redundant support systems, as set forth below, to maintain operational capacity at all times.

Space Requirement: A total of approximately 78,000 square feet.

Location/Adjacency: The Computer Facility shall be located in above-grade space on the third level of both wings of Building A. The Computer Facility shall have proximity to a service elevator which is served by a receiving dock. Lessor shall provide sixty-seven thousand dollars (\$67,000) to be used to produce windowless space.

Requirements: The Lessor shall provide the following:

(a) **Architectural:** Sealed (dust-proof) recessed slab to accommodate 18" raised access floor. The portion of the slab directly above the Computer Facility sealed against water penetration and free of core drills, holes and other penetrations (not including elevators, stairs and shafts) that may permit the passage of water.

Capability to accommodate ceiling height of 10'-0" clear above the finished access floor. Floor slab that can accommodate slab-to-slab concrete masonry partitions at perimeter walls of this Joint Use Space.

Ceiling plenum of a minimum of 12" measured from the finished ceiling to the bottom of the lowest structural obstruction above the finished ceiling.

Structural live load capacity of 150 lbs./SF.

(b) **Mechanical:** An independent, 24-hour chilled water HVAC system (not including distribution) that will condition all of the Occupiable Space in the Computer Facility, using computer room air conditioning (CRAC) units (one additional redundant unit for each four units required by design loads), with servicing and isolation devices to the extent necessary (i) to maintain $68^{\circ}\text{F} \pm 2^{\circ}\text{F}$ temperature and $45\% \pm 5\%$ relative humidity year round, and (ii) to support tenant equipment loads of 154 BTU per square foot per hour and cooling load for UPS batteries. Secondary air distribution shall be provided within the raised floor which shall be provided as part of the Fit-Out.

Riser ductwork that can accommodate an exhaust system (to building exterior).

Any sump pumps associated with the Computer Facility shall be a triplex type.

Piping or ductwork which is not supplying the Computer Facility shall not pass through such Computer Facility space, including floor and ceiling plenums.

(c) **Electrical:** All ITEPS equipment for the Computer Facility shall be located within the building that houses the Computer Facility and arranged within the equipment room(s) such that each piece is easily removable from the building without performing destructive work to the building. See Section 8.11.3 for a description of the ITEPS. The equipment room shall not be located below plumbing drain lines or water lines, or on floors more than one floor below street level. All floor-standing electrical equipment shall be installed on 4 inch concrete housekeeping pads.

Individual grounding connection to a wall mounted isolated copper ground bus bar. This grounding bar shall be individually and directly connected to the grounding loop for the building that houses the Computer Facility. Said building shall have a low ohmic rated grounding system of 3 ohms or less.

(d) **Plumbing:** No supplemental to Base Building Standard Requirement.

(e) **Fire Protection:** A separately zoned sprinkler system, with dedicated flow and tamper switches and sprinkler system alarms.

8.15.3. Child Care Center.

Function: Child care center.

Space Requirement: Approximately 17,300 square feet to house 148 children and the appropriate number of staff.

Location/Adjacency: Space for the Child Care Center shall be located on Level 1 of Building C.

Requirements: The Lessor shall provide the following:

(a) **Architectural:** Design and construction of dedicated short-term parking for twenty (20) vehicles for pick-up and drop off of children in the east parking garage.

One shall be able to enter the child care facility off the lobby of Building C. The east parking garage shall be located next to Building C and shall afford direct access to the Child Care Center via a covered pedestrian bridge.

A secured, adjacent outdoor play yard complying with local permitting and licensing requirements and with the requirements of the GSA Child Care Center Design Guide, and having a dedicated elevator and stair access to the Child Care Center and proper drainage for surface runoff. The play yard shall be located remote from service drives, service docks, mechanical equipment, electrical service equipment, any exhausts, and the Main Entrance (remoteness may be created by either physical distance or effective intervening barriers). The play yard shall be excluded from the

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calculation of both rentable and occupiable square footage. The play yard shall be screened from the streets by structures and/or landscaping and shall be enclosed with attractive and secure fencing. Play yard equipment shall be provided as part of the Fit-Out.

Maximize use of exterior views, natural lighting and surrounding topography.

(b) **Mechanical:** Mechanical system upgrades (located in this Joint Use Space) that will deliver (through branch and secondary distribution systems within the Child Care Center as part of the Fit-Out) 75-78 degree F temperature in the heating season measured at 3' above the floor and that will maintain 50% ± 10% relative humidity year round.

Riser ductwork that can accommodate an exhaust system (to building exterior) for kitchen, toilets, diapering area and janitor closets.

(c) **Electrical:** Provide exterior lighting for the security of the playground and entrances.

(d) **Plumbing:** Provide separate playground restroom within the security perimeter of the Child Care Center on the concourse level of Building C. Riser piping that can accommodate necessary plumbing within this Joint Use Space.

8.15.4. Fitness Center.

Function: Employee fitness center.

Space Requirement: Approximately 15,200 square feet

Location/Adjacency: Space for the Fitness Center shall be located on Level 1 of Building B.

Requirements: The Lessor shall provide the following:

(a) **Architectural:** Capability to accommodate ceiling height of 12'-0" clear above the finished floor.

Within shell space, a minimum of 1,800 square feet of column-free space for the aerobics rooms.

Floor slab that can accommodate slab-to slab concrete masonry partitions at perimeter walls of the Fitness Center.

(b) **Mechanical:** An independent HVAC system including, without limitation, a separate AHU for this space, with servicing and isolation devices. Secondary air distribution shall be provided as part of the Fit-Out.

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Riser ductwork that can accommodate an exhaust system (to building exterior) for toilets and locker rooms.

(c) **Electrical:** No supplement to Base Building Standard Requirements.

(d) **Plumbing:** Riser piping that can accommodate necessary plumbing within this Joint Use Space.

8.15.5. Cafeteria.

Function: Commercial food service facility to support building occupants and visitors that will serve as a large conferencing facility during off hours.

Space Requirements: Approximately 18,700 square feet

Location/Adjacency: Space for the Cafeteria shall be located on the concourse level of Building A. Public access to the Cafeteria shall be from the Atrium. Entrance and egress for the seating area shall be at the north end of the Atrium. The Cafeteria receiving areas shall be near the west loading dock of Building A.

Requirements: The Lessor shall provide the following:

(a) **Architectural:** Capability to accommodate ceiling height of 12'-0" clear above the finished floor.

Floor slab that can accommodate slab-to slab concrete masonry partitions at perimeter of Cafeteria and throughout the kitchen and servery.

Recessed floor slab to accommodate quarry tile installation.

Approximately 6,000 square feet of outdoor seating area to accommodate 200 people in an area consisting of seventy percent (70%) eating and thirty percent (30%) landscaping. Furniture in this outdoor area shall not be provided by Lessor. The outdoor seating area shall be excluded from the calculation of both rentable and occupiable square footage.

(b) **Mechanical:** An independent HVAC system including, without limitation, separate AHU(s) for this space, with servicing and isolation devices supporting: (i) a minimum occupancy load of one person per 25 square feet of occupiable Cafeteria space and (ii) the mechanical and electrical heat loads of the kitchen and servery. Secondary air distribution shall be provided as part of the Fit-Out.

Riser ductwork, located within the building core, that can accommodate an exhaust system (to building exterior) for kitchen, toilets and serving area.

(c) **Electrical:** Additional electrical capacity sufficient to support all special power requirements for the kitchen and servery.

Exterior lighting for evening functions.

(d) **Plumbing:** Riser piping that can accommodate necessary plumbing within this Joint Use Space.

8.15.6. Health Unit.

Function: Health Unit for Government employees.

Space Requirement: Approximately 3,000 square feet

Location/Adjacency: Space for the Health Unit shall be located at Level 1 of Building C, adjacent to the Child Care Center.

Requirements: The Lessor shall provide the following:

- (a) **Architectural:** No supplement to Base Building Standard Requirements.
- (b) **Mechanical:** Riser ductwork that can accommodate an exhaust system (to building exterior) for toilets, clean and dirty utility storage, bed resting and janitor closets.
- (c) **Electrical:** No supplement to Base Building Standard Requirements.
- (d) **Plumbing:** Riser piping that can accommodate necessary plumbing within this Joint Use Space.

8.15.7. Mail Room.

Function: Central point for receipt and distribution of mail.

Space Requirement: Approximately 5,000 square feet

Location/Adjacency: Space for the central Mail Room shall be located on the concourse of Building C proximate to the loading docks, the service elevators, and the service tunnel to Building E.

Requirements: The Lessor shall provide the following:

- (a) **Architectural:** Floor slab that can accommodate slab-to-slab concrete masonry partitions at perimeter walls of this Joint Use Space.
- (b) **Mechanical:** No supplement to Base Building Standard Requirements.
- (c) **Electrical:** No supplement to Base Building Standard Requirements.

(d) **Plumbing:** No supplement to Base Building Standard Requirements.

8.15.8. Building Conference Centers.

Function: Large rooms for meetings/conferences.

Space Requirement: Approximately 2,300 square feet in each of Buildings B, C, D and E.

Location/Adjacency: Level 1, adjacent to entry lobby and restrooms.

Requirements: The Lessor shall provide the following:

(a) **Architectural:** Capability to accommodate minimum ceiling height of 10'-0" clear above the finished floor.

(b) **Mechanical:** HVAC capacity that meets Code for assembly classification.

Riser ductwork that can accommodate an exhaust system to building exterior.

(c) **Electrical:** No supplement to Base Building Standard Requirements.

(d) **Plumbing:** No supplement to Base Building Standard Requirements.

8.15.9. Storage Room.

Function: Warehouse.

Space Requirement: Approximately 6,000 square feet

Location Adjacency: Space for the Storage Room shall be located in Building D concourse. The space shall be proximate to the loading dock and easily accessible to the service elevators serving Building D and to the concourse walkway which shall provide enclosed conditioned access to all the Campus buildings.

Requirements: The Lessor shall provide the following:

(a) **Architectural:** Floor slab that can accommodate slab-to slab concrete masonry partitions at perimeter walls of the Storage Room.

Floor loading capacity of 150 lbs./SF live load.

(b) **Mechanical:** No supplement to Base Building Standard Requirements.

(c) **Electrical:** No supplement to Base Building Standard Requirements.

(d) **Plumbing:** No supplement to Base Building Standard Requirements.

8.15.10. Public Search Facility.

Function: Research library. Storage of patent and trademark data for access by the general public and Government personnel.

Space Requirement: Approximately 118,000 square feet

Location/Adjacency: The Public Search Facility shall be located in Level 1 of both wings of Building A and Level 2 of the east wing of Building A. Public access to the Public Search Facility shall be at Level 1.

Requirements: The Lessor shall provide the following:

(a) **Architectural:** Separate interior entrance(s) off the main entrance of the Facility, consistent with adjacent architectural treatment.

All space with live floor loading capacity of 150 lbs./SF. Space can be located on multiple contiguous levels.

All space shall have the capability to accommodate minimum ceiling height of 11'-0" above finished floor.

A dedicated passenger elevator shall shuttle searchers and search room employees between Level 1 and Level 2 at the east wing of Building A.

A monumental stairway connecting the two levels of the east wing of Building A.

A two-story volume created by a large opening in the Level 2 floor slab adjacent to the monumental stairs. This opening in the floor will be secured with a glass and stainless steel handrail.

Recessed slab that can accommodate 6" raised access floor on Level 2 of the east wing of Building A.

(b) **Mechanical:** An independent HVAC system including, without limitation, separate AHU(s) and controls for this space, with servicing and isolation devices capable of maintaining 50% \pm 10% relative humidity year round. Secondary air distribution shall be provided as part of the Fit-Out.

Riser ductwork that can accommodate an exhaust system to building exterior for toilet rooms.

(c) **Electrical:** Supplemental capacity for 488 search carrels with telephone/data outlets and power for personal computers and carrel task lighting.

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Balance of Public Search Facility requires no supplement to electrical Base Building Standard Requirements.

(d) **Plumbing:** No supplement to Base Building Standard Requirements.

8.15.11. Receiving Area(s).

Function: Small areas off loading dock area for temporary staging.

Space Requirement: Approximately 500 square feet in each Building, not to exceed 3,000 square feet total.

Location/Adjacency: Space for Receiving Areas shall be adjacent to loading dock area in each offered building, proximate to service elevator, as shown on the Building Floor Plans.

Requirements: The Lessor shall provide the following:

(a) **Architectural:** Capability to accommodate ceiling height of 12'-0" clear above the finished floor.

Floor slab that can accommodate slab-to-slab concrete masonry partitions at perimeter walls.

Minimum structural live load capacity of 150 lbs./SF.

(b) **Mechanical:** No supplement to Base Building Standard Requirements.

(c) **Electrical:** No supplement to Base Building Standard Requirements.

(d) **Plumbing:** No supplement to Base Building Standard Requirements.

8.15.12. Training Facility.

Function: Employee training and conferencing.

Space Requirement: Approximately 44,000 square feet

Location/Adjacency: Building A, Level 2 (west tower).

Requirements: The Lessor shall provide the following:

(a) **Architectural:** Recessed slab to accommodate 6" access floor.

Capability to accommodate ceiling height of 12'-0" clear above finished access floor.

(b) **Mechanical:** An independent HVAC system that meets Code for assembly classification. Secondary air distribution shall be provided as part of the Fit-Out.

(c) **Electrical:** Electrical systems providing at least twice the Base Building Standard Requirements for electrical capacity.

(d) **Plumbing:** Riser piping that can accommodate necessary plumbing within this Joint Use Space.

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